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Evaluation of the Early Years Programme of the Childhood Development Initiative: Full Report

Noirin Hayes

Technological University Dublin, noirin.hayes@tudublin.ie

Iram Siraj-Blatchford

University of London

Siobhán Keegan

Technological University Dublin, Siobhan.Keegan@tudublin.ie

Eimer Goulding

Technological University Dublin, eimearmary.goulding@tudublin.ie

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Evaluation of the *Early Years* Programme of the Childhood Development Initiative



Early
Childhood
Care and
Education



2013
CHILDHOOD DEVELOPMENT INITIATIVE

Evaluation of the *Early Years* Programme of the Childhood Development Initiative

Nóirín Hayes, Iram Siraj-Blatchford, Siobhán Keegan and Eimear Goulding

Centre for Social and Educational Research, Dublin Institute of Technology
and Institute of Education, University of London



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and social research
Institute of Education
University of London

2013

CHILDHOOD DEVELOPMENT INITIATIVE



The authors of this report are:

Principal Investigators: **Professor Nóirín Hayes** (Centre for Social and Educational Research, Dublin Institute of Technology) and **Professor Iram Siraj-Blatchford** (Institute of Education, University of London); *Lead Researcher:* **Siobhán Keegan** (Centre for Social and Educational Research, Dublin Institute of Technology); and *Research Assistant:* **Eimear Goulding** (Centre for Social and Educational Research, Dublin Institute of Technology). *Fieldworkers:* Jean Kelly, Aisling Joyce, Janet O'Farrell, Síle Murphy, Carla Beattie, Christine O'Farrelly, Aisling Cusack, Tara Lehane, Maria McDermott, Aoife Hickey, Niamh O'Connor, Emma Breen and Clíodhna O'Donovan.

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Tallaght West Childhood Development Initiative Ltd.
St. Mark's Family and Youth Centre
Cookstown Lane
Fettercairn
Tallaght
Dublin 24
Tel: +353 (0)1 494 0030
Fax: +353 (0)1 462 7329
E-mail: info@twcdi.ie
Web: www.twcdi.ie

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Minister's Foreword

For several years now, the Government, most recently though my own Department, has demonstrated a serious and significant commitment to the area of prevention and early intervention. Since 2007, we have, in partnership with Atlantic Philanthropies, made a considerable investment in the Prevention and Early Intervention Programme, which constitutes the Childhood Development Initiative (CDI), youngballymun and Preparing for Life, Darndale. Specifically, my Department has introduced and maintained a universal free pre-school year, a move which is directly related to this commitment and recognises this period of children's lives as a key time for impacting positively on later trajectories.

The publication of this report is timely, as the first National Early Years Strategy is being developed by my Department, working with the sector. The Strategy will support the many other important developments in this sector, which aim to improve quality and outcomes, such as the implementation of Siolta and Aistear in Early Years services. Collectively, we are developing a deeper understanding of "what works" for children and families and together we can maximise the positive experiences that a quality Early Years service can offer to children and their parents.

This evaluation did not set out to establish whether or not supports prior to commencing school are of value: this is well established internationally. Rather, it explored the potential benefits of wrap-around supports, such as parental engagement, improved connections with health services and the impact of professional development and reflective practice. These are important considerations in further developing our common understanding of 'what works', as well as being relevant in the context of a public reform agenda which seeks to improve our effectiveness and efficiency.

Investment in prevention and early intervention remains central to this Government, not only for the health and well-being of the nation, but also for its economic recovery. That is why I am determined that the new Child and Family Support Agency will have a strong focus on prevention and early intervention. This commitment was further manifest in the recent Budget announcement regarding the development of area-based responses to child poverty. I would expect that this new initiative will further develop and consolidate much of the learning from the Prevention and Early Intervention Programme.

I congratulate all involved in completing what was undoubtedly a complex evaluation process and I welcome the valuable learning and findings within this report.

Frances Fitzgerald, TD
Minister for Children and Youth Affairs

CDI Response to the Evaluation of the Early Years Programme

On behalf of the Board of the Childhood Development Initiative (CDI), I am delighted to receive, endorse and welcome this report.

CDI is one of three sites that constitute the Prevention and Early Intervention Programme (PEIP), a joint initiative of the Department of Children and Youth Affairs (DCYA) and The Atlantic Philanthropies. The three projects (CDI, Youngballymun and Preparing for Life) were set up with the objective of *'testing innovative ways of delivering services and early interventions for children and young people, including the wider family and community settings'* (DCYA, 2011).

Based in Tallaght West, CDI is the result of the professionalism, passion and persistence of a group of 23 concerned individuals and organisations living and working in the community who had a vision of a better place for children. Through innovative partnerships, they brought together an approach which drew on both the science and the spirit of best practice in order to meet the identified needs of children and families. A partnership was agreed between the Government and The Atlantic Philanthropies, and the consortium's first piece of work was a needs analysis entitled *How are Our Kids?* (CDI, 2004). A number of priorities were agreed based on this research, one of which was to establish and incorporate CDI. This was completed in 2007 and following this a range of programmes have been designed, delivered and independently evaluated.

CDI's programmes are the *Doodle Den* Literacy Programme for Senior Infant Children; the *Mate-Tricks* Pro-social Behaviour Programme for 9 and 10 year-olds; the *Healthy Schools* Programme; Early Intervention Speech and Language Therapy Service; Community Safety Initiative; Safe and Healthy Place Initiative; Restorative Practice; the Quality Enhancement Programme; and, of course, the *Early Years* Programme, which is the focus of this evaluation report.

All CDI programmes are evidence-informed and incorporate elements for children, families and the practitioners working with them, and are delivered through existing services and structures. CDI has a core role in promoting quality, capacity and value for money. All elements of our work are rigorously and independently evaluated, and we are committed to sharing the learning and experiences from Tallaght West in order to inform and shape future policy, practice, training and curriculum development. This report is one strand in a comprehensive dissemination process aimed at doing just that.

The evaluation of CDI's *Early Years* Programme was a complex process for a number of reasons. The rigour of the evaluation methodology, utilising a randomised controlled trial, brought its own challenges, such as how to engage all services in developing quality while avoiding 'contamination' of the evaluation process. In addition, the decision to compare those children receiving the CDI service with children participating in other Early Years services, rather than children not receiving any service, was a brave one, based on CDI's commitment to ensuring that conclusions are meaningful and maximise the opportunity to improve our understanding of what works for children and families. Furthermore, given the many components of the service, extracting those elements that impacted positively on children and families in order to identify the core factors which constitute a high-quality service was problematic and this report is unable to definitively state which elements are most likely to improve outcomes.

The evaluation does, however, draw some important conclusions regarding the centrality of practitioner supports, training and reflective practice. It identifies the benefits of and mechanisms for improved parental engagement, and it highlights factors that support the development of a quality learning environment, both in the family home and in the Early Years service – all of which have been demonstrated as influencing outcomes for children.

The value of this work has been recognised in the continued funding for the parent/carer facilitator role within the participating Early Years services, and CDI is delighted that the County Childcare Committee is now engaged in supporting this initiative, a partnership which offers real opportunity for replication and integration of this way of working.

There are many conclusions within this report that could, and should, influence policy, practice and professional training. CDI is committed to maximising the investment from the Department of Children and Youth Affairs and The Atlantic Philanthropies, and through a comprehensive dissemination plan, CDI will utilise this report, and those of our other seven evaluations, to support a better understanding of how to improve outcomes for children, families and communities.

Joe Horan

Chair

CDI Board

Acknowledgements

We would like to extend our appreciation to the Childhood Development Initiative, members of the Expert Advisory Committee and the Reflection Group for their assistance with this report.

Special thanks to Gráinne Smyth, Tara Murphy and Sinéad McNally from the Childhood Development Initiative, who developed a close and collaborative working relationship with the research team over the course of the evaluation.

We are particularly grateful to the research participants: children, parents, Early Years practitioners, parent/carer facilitators and managers from across the 17 participating Early Years services, who gave up their time to become involved. Thanks must also be extended to those who provided training on programme components, for their willingness to share information and learning with the evaluation team.

We would like to acknowledge the support of our colleagues in the Centre for Social and Educational Research, the Department of Social Sciences, Dublin Institute of Technology, and in the Institute of Education, University of London.

We would like to thank the evaluation teams from Queens University Belfast, the National University of Ireland, Galway, Trinity College, Dublin, and the National University of Ireland, Maynooth, for providing opportunities for shared learning and discussion at the regular evaluation team meetings.

We reserve special thanks for the team of research fieldworkers: Jean Kelly, Aisling Joyce, Janet O'Farrell, Síle Murphy, Carla Beattie, Christine O'Farrelly, Aisling Cusack, Tara Lehane, Maria McDermott, Aoife Hickey, Niamh O'Connor, Emma Breen and Clíodhna O'Donovan.

The research team would also like to acknowledge The Atlantic Philanthropies and the Department of Children and Youth Affairs whose generous support made this evaluation possible.

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Glossary

CDI	Childhood Development Initiative in Tallaght West
Cohort	There were two different cohorts or waves of participants in the research: <i>Cohort 1</i> participants took part in the research from September 2008 until August 2010. <i>Cohort 2</i> participants took part in the research from September 2009 until August 2011.
Condition	Whether a service, child or parent was in the CDI programme delivery group or in a group that delivered Early Years service as normal.
Control	Services, Early Years practitioner, children or parent participants who were <i>not</i> involved in the CDI programme delivery and therefore could provide a point of comparison.
Intervention	Services, Early Years practitioner, children or parent participants who were involved in the CDI programme delivery.

Executive Summary

The Early Childhood Care and Education Programme of the Childhood Development Initiative is a 2-year programme targeted at children and their families in Tallaght West. The final report of the evaluation team reports on the baseline, mid-phase and end phase findings for the whole sample of children, parents and childcare services.

Methodology

The research was designed as a cluster randomised trial, an experimental method by which social units or clusters (in this case, Early Years services) were randomly allocated to intervention or control groups. The research team used the following sources of information: standardised child assessments taken over time; child social/behavioural profiles completed by Early Years service/primary staff and parents; parental interviews; quality rating scales; Early Years practitioner focus groups; documentary analysis; and observation. Researchers first assessed children at the beginning of Early Years service provision (baseline) when they were aged at least 2 years and 6 months. Assessments focused on children's cognitive and language attainment on a range of standardised instrument subscales. Children were rated on their social skills at this time by their parents and their key worker. Researchers returned to assess children just before the end of their 1st year of Early Years service provision (mid-phase) and just before the 2nd year of Early Years provision. Quality assessments were carried out in the Early Years services in the same time period as child assessments in order to allow for a linking of service quality and child outcome scores. Parents were interviewed twice, once at the time that their child entered Early Years services and once after 2 years (end of Early Years service provision). Early Years practitioners from the intervention group participated in a focus group, once at the end of each year. Other relevant personnel (such as CDI speech and language therapists, CDI staff and programme trainers) were interviewed and/or consulted to obtain information for the process evaluation. In addition, the evaluation team attended programme-related meetings as non-participant observers and analysed the documentation arising from the life of the *Early Years* Programme, such as minutes, progress reports and newsletters.

Research questions

The main research questions are outlined below and organised according to the relevant participant group:

- **Children:** Did (and to what extent did) participation in the CDI *Early Years* Programme result in better outcomes in terms of child development (cognitive, language and social) after 2 years of programme implementation as compared to the control group?
- **Parents:** Did parental participation in the CDI parental component result in better outcomes (parental stress, parent estimation of child social skills and behaviour, home-learning environment) as compared to the control group of parents?
- **Early Years services:** Did service participation in the implementation of the CDI *Early Years* Programme result in better outcomes in terms of environmental quality (curricular, process and structural) as compared to the control group?

Process research questions

The process evaluation sought to examine the process (the 'how') of programme implementation under the categories utilisation, fidelity and organisation.

Key findings

Sample

- There were no major differences between intervention and control groups at baseline (as measured by parent and child background variables, parent ratings of stress, home-learning environment, child cognitive and social skills, and Early Years service quality).
- This finding indicated that the randomisation at Early Years service level had been successful for the majority of variables.

Programme effects

- There was no positive or negative programme effect on child cognitive and language end-phase outcome scores.
- There was a programme effect on the quality of activities being planned and implemented in intervention services. This means that intervention group services engaged significantly more often in music/movement, nature/science and mathematics activities than control services did.
- There was a programme effect on the overall curricular and planning quality over time and this had a medium effect size (in favour of the intervention group). This means that the range of topics that were targeted at promoting children's learning and development was significantly better in intervention services than in control services, and that intervention Early Years practitioners planned more than control service practitioners tended to.
- The more sessions of a parenting course that parents attended, the higher the home-learning environment, which indicates a positive effect of the intervention parenting course (Parents Plus Community Course) on the quality of the home-learning environment. This finding suggests that such changes in parenting behaviour in the home will lead to direct gains for children in the future, as was found in other studies (Melhuish *et al*, 2008 and 2010).

Trends

Children

- One year (and two years) of Early Years experience, for both control and intervention groups, was linked to improvements in child development outcomes on the British Ability Scales Children.
- All children who participated in Wave 2 of the evaluation did better on the subtests Rhyme and Block Building and Naming Vocabulary at the end of the research. This finding applied more to the Cohort 2 intervention group than to the Cohort 1 intervention group.
- Although there is no direct statistical support for the presence of different programme effects in Cohort 1 and 2 respectively, the trend suggests that, at the least, a different and more successful level of programme implementation took place in Cohort 2, when coupled with evidence from supporting process findings.
- At end phase, more intervention group children were classified positively for their conduct, peer relationships, pro-social behaviour and hyperactivity, which process findings suggest may be linked to the HighScope conflict resolution approach implemented by intervention Early Years practitioners.
- Fewer intervention children than control children were classified as having borderline or abnormal hyperactivity levels.

Early Years service environment quality

- Early Years practitioners in intervention services created a significantly better literacy environment by the end of the programme. In the control group, there was no change in the literacy environment created.
- By the end of the research, the literacy environment score for the intervention group was in the 'good' range, while for the control group the literacy scores remained closer to 'minimal'.
- In the control group, there was a significant reduction in caregiver sensitivity scores from baseline to end phase, whereas in the intervention group there was no significant change in scores across the same time period.
- This implies that practitioners in the intervention group maintained a similar level of sensitivity to children over time, while the control group practitioners tended to become slightly less sensitive over the same time period.

Process findings

- Intervention Early Years practitioners identified the HighScope training they received as the most significant aspect of the CDI *Early Years* Programme in changing their understanding of, and approach to, educating and caring for young children.
- Cohort 2 intervention practitioners reported feeling more confident about HighScope delivery after one year than Cohort 1 practitioners did after one year, and were much more satisfied with the content, support and delivery of the HighScope training.
- Process findings indicate that programme implementation in Year 1 of both cohorts should be considered a bedding-in period since training was ongoing throughout the first year, although there was evidence of a smoother implementation and training process for Cohort 2 Early Years practitioners.
- The quantitative finding in relation to a Cohort 2 effect on certain outcome scores suggests that delays in training or lack of consistency in programme implementation between cohorts may partly explain the trend towards more positive outcomes found in the results for the Cohort 2 intervention group.
- Early Years practitioners welcomed training provided by the speech and language therapists and described how it had taught them to think about the importance of print-rich environments and the power of reading with children, as well as helping them to tune in to children and their speech and language needs in a deeper way.
- By training Early Years practitioners and offering an SLT service to Early Years children, children with speech and language needs were identified and treated at an earlier age than would be the case if they had to wait to visit a clinic-based therapist. In turn, this will help them to be ready to learn once in school and will have positive implications for their general social development and later life outcomes.
- Most parents engaged well with the parental component of the programme, which was universally regarded by practitioners to be due to the support provided by individual parent/carer facilitators.
- The Parents Plus Community Course, in particular, was identified as being well implemented and was well received by parents and practitioners alike. This is a testament to it being manualised and evidence-based, in addition to being supported by a well-trained and accessible mentor.
- Early Years practitioners displayed a keen awareness of the importance of manual fidelity across services and they worried that differences in individual service interpretation of roles, components and practice may have resulted in different implementation across services and a dilution of effects.
- Practitioners across all services reported that a clearer manual with checklists, timetables and clear and specific job/role descriptions, coupled with clearer responses from CDI personnel (such as the Quality Specialist) would have made them feel more confident that they were implementing the programme as intended.

- In addition to the need for clear roles and responsibilities, the process evaluation identified the value of having an accessible mentor for all manual components to enable focused practice.
- The implementation of Síolta in services was supported by key implementation drivers, which included a longer working week (37 hours); better staff ratios; interested, well-trained and invested Early Years practitioners; organised managers who took ownership of the process; and low staff turnover.
- Communities of Practice meetings were identified by Early Years practitioners as a support that informed their practice, helped them to reflect and gave them a sense of how manual implementation was progressing in other services.
- Intervention services tended to have fewer instances of very low child attendance when compared to control services, which provided support for the overall CDI programme model in promoting attendance.
- Intervention group parents reported similar levels of satisfaction with Early Years service provision as their control counterparts. However, they reported receiving extra help for themselves or their child twice as often as control group parents did. This extra help was also more diverse than the types of help reported in control group Early Years service and pointed to the success of the programme design in anticipating and meeting the needs of its client base.

Conclusion

The findings show modest gains for the CDI *Early Years Programme* compared to the control group in a number of areas across different elements of the intervention. The strongest of these related to the quality of the curriculum and activities provided in intervention Early Years services. In terms of outcomes for children, gains were indicated in areas such as improved behaviour and social skills, child attendance, and better speech and language prognosis on entry to school. Moreover, the discovery of an 'indirect' effect on parenting – with the quality of the home-learning environment being positively associated with the number of parent sessions attended – is an indication that intervention children and their siblings will likely benefit into the long term from a more positive home-learning environment.

So, while the gains were small and more strongly observed at one level removed from the child (Early Years service- or parent-level), they were consistent in direction and indicated that, at the very least, the intervention improved the ability of those around the children to support their learning and development, and to interact meaningfully with children whether the setting was the home or the Early Years service. This is a powerful finding, with implications that stretch beyond the lives of intervention children.

Process findings indicate that parents and Early Years practitioners were invested in sustaining the intervention by using the knowledge they gained into the long term, which will spread the benefits of the intervention as reported above to the lives of countless children into the future.

Chapter 1: Introduction



**Early
Childhood
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1.1 The CDI *Early Years* Programme

A needs analysis report entitled *How are Our Kids?* (CDI, 2004) characterised the community of Tallaght West as having an over-representation of families living in poverty, many in lone-parent family households and often suffering from stress related to multiple disadvantage. As a result of this report, the Childhood Development Initiative (CDI) developed a 10-year strategy, which sought to act on three specific aims:

- to develop new services to support children and families;
- to encourage better integration of education, social care and health provision;
- to promote community change initiatives to improve the physical and social fabrics of the neighbourhoods in which children live, play and learn.

The CDI *Early Years* Programme was just one programme developed in line with these aims. While explicitly representing the development of the first aim, it also offered opportunities to incorporate the other two as the newly developed services grew and established themselves within the community. Therefore, the CDI *Early Years* Programme was designed to support and target all families in Tallaght West, including those whose children may face barriers to educational achievement and well-being.

1.1.1 Programme content

The programme was a 2-year Early Years education programme targeted at eligible children and their families in Tallaght West. The programme consisted of the following components:

- direct provision, over the course of 2 years, of a low-cost, flexible and broad-based curriculum operating within the principles of HighScope for 4 hours 15 minutes per day (cost to parents was €5 per week);
- minimum qualifications of FETAC Level 5 in childcare or equivalent for childcare workers and degree in childcare or equivalent for senior childcare workers;
- Early Years practitioners worked a 37-hour working week, allowing for non-contact planning and paperwork and home visit time;
- Practitioner:child ratio of 1:5, which is more favourable than the national comparison of 1:6 or higher for a similar service;
- observation of children's learning to enable practitioners to develop child-centred follow-up work plans in collaboration with parents during home visits;
- provision of nutritious food, physical play and recreation opportunities, as well as specialist primary healthcare support in the areas of dental hygiene and psychological assessment;
- access to a dedicated speech and language therapist to support children in their language development.

For parents/carers, the programme focuses on the facilitation of parents'/carers' self-identified parenting needs and educational interests through work with a dedicated parent/carer facilitator (PCF) and through participation in a parent training course. Specifically, the parent component consisted of the following:

- provision of quality childcare and activities for parents based on their specific needs as a means of ameliorating the effects of social stressors on parents. This was to be aided by home visits on the part of the parent/carer facilitator and key Early Years practitioners, whose role it was to liaise and develop a relationship with parents and to provide information for parents on topics such as education, services or extra supports;
- provision of a parent education programme (Parents Plus Community Course) to support parents in the positive parenting of their children, with a focus on enhancing children's early learning and development.

1.1.2 Randomisation

Early Years services in Tallaght West applied to deliver the CDI *Early Years* Programme through the submission of an Expression of Interest form. Applicants were informed that delivery of the programme would be subject to a randomisation process¹, an experimental method whereby clusters or groups (in this case, Early Years services) are randomly allocated to intervention or control groups after being matched in pairs to balance important prognostic factors (Early Years practitioner qualifications; setting capacity; staff:child ratio) at baseline. The level of inference was not simply the unit of randomisation (i.e. the Early Years service), rather analysis focused both on service-level outcomes and child-level outcomes, with the child outcomes being used to make inferences about the service. Services that were assigned to the control condition delivered their Early Years programmes as usual, but practitioners in these services were offered the opportunity to receive the same, or equal, level of training as those in intervention services once programme evaluation was complete and some received funding towards the provision of extra child spaces.

1.1.3 Comparing and contrasting of intervention and control services

Most control group Early Years services (75%) were operating an undifferentiated Early Years curriculum, i.e. they were not informed by any particular overarching curricular approach. In addition:

- none had the parent/carer facilitator (PCF) role;
- none had an on-site designated speech and language therapist;
- none had a parenting course or parent component;
- none had a guaranteed 2-year programme;
- none ran for the same length of time per day as the CDI programme (i.e. 4¼ hours) – most children attended for 3 hours only per day;
- none had the qualifications requirements of CDI Early Years practitioners (i.e. minimum of FETAC Level 5 in childcare or equivalent for childcare worker and minimum of degree in childcare or equivalent for senior childcare worker);
- none (bar one) had the same staff:child ratios as CDI (i.e. 1:5);
- most charged considerably more for childcare than the €5 per week of the CDI programme;
- most Early Years practitioners had limited or no non-contact hours compared to CDI Early Years practitioners.

Similarities

Two control services out of 8 (n=10 children and n=11 children attending) reported that their Early Years curriculum was informed by the principles of HighScope. On observation of practice in these services, the main aspect of HighScope which was followed in practice was the Daily Routine, i.e. all followed a HighScope-type daily routine with small and large group time and had a key worker system. Key aspects, such as the Review element of the Plan-Do-Review component, were observed being inconsistently carried out in both services, in contrast to the more consistent practice observed in CDI Early Years services. There was also less emphasis on planning, record-keeping and report compilation than was observed in intervention Early Years services, which is also a key element of HighScope practice and implementation.

¹ Allocation to intervention and control groups was completed by the funding agency Childhood Development Initiative (CDI) rather than by the research team. Matching criteria, such as service capacity and staff qualifications, were drawn up by CDI and services were matched accordingly into pairs. An independent candidate was identified by CDI and, at an appointed time and date, the candidate was responsible for the allocation of one service from each pair to the intervention condition, meaning that the matched service automatically belonged to the control condition from then on. This randomisation process took place in the CDI offices.

One of the 8 control services (10 children) had the same child:staff ratios as CDI intervention services and that was matched to an intervention service that was also run by the same umbrella organisation. This service also engaged in home visits from time to time with some parents (when necessary), but did not have a 4 visits per year requirement or a designated parent/carer facilitator to help with the visits, as was the case with intervention services. This service also operated a similar practitioner working week to that of CDI practitioners.

Therefore, while it might be suggested that the similarities between these two control services and the CDI intervention service might, at face value, dilute the possibility of a treatment effect, it is the opinion of the evaluation team that this is unlikely to be the case given the small sample size involved (21 children and 2 services) and based on observation of the low level of similarities on a practice level. Nevertheless, the potential for these services to dilute a treatment effect was considered in the analysis (see Section 4.7.1).

1.1.4 Intervention delivery

In order to deliver the intervention, capacity-building within the Early Years services delivering the CDI *Early Years Programme* took place and a number of programme features were delivered in each intervention service. Intervention at Early Years practitioner level included training all intervention Early Years practitioners in the delivery of the HighScope curriculum and the Síolta framework (non-mandatory), having an extra Early Years practitioner to allow a ratio of 1:5 and having a designated staff member (not included in the ratio) to work with parents, called the parent/carer facilitator (PCF). The role of the PCF was designed to support learning between the home and Early Years environments and to create better working relationships between parents and children. It was required that senior childcare practitioners had a degree-level qualification or equivalent in early childhood care and education, while the childcare workers were required to have at least a FETAC Level 5 qualification in childcare or equivalent. In practice, practitioners operated a key worker system and worked a 37-hour week, which, being longer than typical childcare working weeks, allowed for curriculum and daily planning and individualised record-keeping. Early Years practitioners also engaged in home visits (target of 4 per year) with families of Early Years service children as a means of bridging the Early Years service–home-learning gap. Children were referred to a designated intervention speech and language therapist (whose caseload consisted of intervention children only), as required, and the therapist held assessment and therapy sessions in the Early Years services. Children were also referred to psychological, primary health and social service professionals as necessary and these referral processes were supported by networks developed by the delivering agency, supported by CDI. In order to bridge the gap in provision in the summer months, children were offered a summer programme in the month of July, which was less formally structured and offered opportunities for parent involvement, day trips and sustained outdoor activities. Early Years practitioners also aimed to aid transition between school and Early Years services by liaising with receiving schools and preparing children for the transition to school.

1.1.5 Intervention stage

The intervention was designed to be delivered in 2 waves, each lasting 2 years. Wave 1 began in September 2008 and ceased in August 2010. Wave 2 began in September 2009 and ceased in August 2011. Five services delivered the intervention Wave 1 and a further 4 new services delivered it in Wave 2. One service from the first wave opened an extra room with new Early Years practitioners for the second wave, therefore one service participated in both waves of intervention delivery and evaluation. CDI made decisions about the sustainability of the Wave 1 services prior to the end of the first programme in July 2010. Although funding was not available to CDI to continue to fund the whole manualised programme, it was decided that certain aspects of the programme would be kept on, namely a continuation of funding for the role of a dedicated speech and language therapist and also the role of one parent/carer facilitator per service. Moreover, a budget for continuous professional development was made available to all services in the intervention group and upon completion of the evaluation, a similar budget was offered to control services.

1.2 Research sample

In the programme manual, it was stated that the CDI *Early Years* Programme targeted children aged 2 years 6 months to 4 years, living in the four communities of Tallaght West, and their parents/carers.

Table 1.1: Number of children assessed at baseline, mid-phase and end-phase stages

		Baseline	Mid-phase	End phase
Cohort 1	Intervention	77	78	70
	Control	75	72	54
	Late entry Intervention*	–	20	20
	Late entry Control**	–	11	10
Cohort 2	Intervention	83	76	74
	Control	76	69	58
	Late entry Intervention	–	3	8
	Late entry Control***	–	2	–
Both cohorts	Total	311	331	294

* 1 child entered immediately preceding mid-phase assessment and 19 children entered at the beginning of Year 2.

** 7 children entered just before mid-phase assessment and 4 children entered at the beginning of Year 2.

*** There were less late entry control children than intervention children because of the better consent response from intervention parents. Control staff were less invested in the research (as they were not receiving a new service) and were less available to follow up on consent forms and to encourage parents to participate.

1.2.1 Child numbers

The number of children assessed at baseline was 311, which was over 100 less than the planned figure of 440. In Cohort 1, there was a follow-up rate of 91% of the original baseline sample (see Table 1.1). All late entry intervention children in Cohort 1 were assessed at the end-phase stage. The follow-up rate for the Cohort 1 control group is 72% and 90% for the late entry children. The total follow-up rate from baseline to end phase for original Cohort 2 children was 89% for the intervention group and 76% for the control group. The better follow-up rate in the intervention group compared to the control group is most likely due to the fact that intervention group children were signed up to a 2-year programme, therefore most were still attending the same Early Years service at the end-phase stage as they had been at the baseline stage. In the control group, children tended to move on to another school or Early Years service after one year (since they were not signed up to a 2-year programme), therefore being more dispersed at the end phase, they were harder to access for assessment purposes.

Chapter 2: Literature Review



**Early
Childhood
Care and
Education**

2.1 Introduction

Reviews of the research on the effectiveness of early childhood education and care (ECEC) have found a consistent link between ECEC and positive child outcomes in a wide range of areas, most commonly social and cognitive gains (Camilli *et al*, 2010; Gilliam and Zigler, 2000 and 2004; Gorey, 2001; Karoly *et al*, 2005). Sometimes these effects can persist into adult life (Campbell and Ramey, 1994; Lazar and Darlington, 1982; Schweinhart *et al*, 2005), resulting in reduced offending, school completion or lower rates of unemployment, among others. The consistency of findings in this area has been helped in no small part by the proliferation of research from planned experimental ECEC interventions with children at risk of experiencing multiple disadvantage. Studies have shown that there is a significant gap in cognitive ability and school attainment between children from low-income families and their more wealthy peers at pre-school age (Brooks-Gunn and Duncan, 1997; Duncan *et al*, 1994; Halle *et al*, 2009; Lee and Burkham, 2002; Smith *et al*, 1997). An analysis of the US Department of Education's Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K) by Lee and Burkham (2002) indicated that the average cognitive scores of children in the highest socio-economic status (SES) group were 60% higher than the scores of the lowest SES group before they started kindergarten (aged 5).

A study by Halle *et al* (2009) found that disparities in child outcomes on cognitive development, social-emotional development and general health are evident at 9 months of age and this gap has grown by the time they reach 2 years. The fact that meaningful differences could be detected at such an early age lead the authors to emphasize the importance of intervening early in the disadvantaged child's life to tackle these disparities. The strongest evidence for the effectiveness of ECEC comes from research on these intervention programmes, which are likely to be scientifically rigorous as a result of randomisation of children or settings to intervention or control groups (Anderson *et al*, 2003; Karoly *et al*, 1998). This has led to a general consensus that those programmes that provide intensive, sustained, high-quality early childhood education and care have consistently found positive effects on cognitive and language development, early learning and school readiness and achievement (Barnett, 1995; Brooks-Gunn *et al*, 1994; Burchinal *et al*, 1997; Feagans *et al*, 1995; Lamb, 1998; Ramey and Ramey, 1998; Roberts *et al*, 1989). Moreover, these effects are usually strongest for children from families who experience multiple stressors or disadvantages (Shonkoff and Phillips, 2001). Research in the area has developed to the extent that it is now possible to identify, with some conclusiveness, the aspects of high-quality early childhood education and care that are associated with positive child outcomes and also exactly what these individual outcomes are. However, there has also been an accumulation of knowledge from non-experimental and large-scale studies (NICHD-ECCRN 2001, 2002, 2004a and 2004b; Sylva *et al*, 2004 and 2008; Wylie, 2004) examining childcare quality in a more general sense, which adds to the evidence of intervention/experimental designs. Effective early education is now generally considered to rely on a marriage of interrelated, but discrete key elements, which will now be examined in turn to establish what research has highlighted in these areas and how this may have relevance for the evaluation of the CDI *Early Years* Programme in Tallaght West.

2.2 Pre-school quality

In the field of ECEC research, high-quality ECEC is widely held to have positive effects on child outcomes, while low-quality childcare is linked to negative child outcomes (Peisner-Feinberg and Burchinal, 1997; Peisner-Feinberg *et al*, 2000; NICHD, 2005). Moreover, some research suggests that children at risk for multiple disadvantage may actually benefit more from high-quality childcare than their better-off peers (Lamb, 1998; Loeb *et al*, 2007). It is useful when considering questions of pre-school quality to have a systematic means of assessing and conceptualising quality. The observational rating scales ECERS-R (Harms *et al*, 1998) and a supplementary extension rating scale called the ECERS-E (Sylva *et al*, 2006) offer a way to capture pre-school quality in concrete terms so it may be compared across time, settings and even countries. The ECERS-R focuses primarily on the structural and process elements of quality and has been used extensively by other researchers (Burchinal *et al*, 2002; De Kruif *et al*, 2000; Gilliam, 2000; Jaeger and Funk, 2001; Phillipsen *et al*, 1997; Sylva *et al*, 2006; Whitebook *et al*, 1989). The ECERS-E was developed by Sylva *et al* (2006) in response to what they saw as the insufficiently 'cognitive' content of the ECERS-R in its assessment of play-based learning environments. The ECERS-E was designed to be more sensitive to important pedagogical processes conducive to children's intellectual and social progress in an English curricular context and also offered a means of assessing pre-school practice aimed at cultural and intellectual diversity. In a large-scale study with 141 pre-school centres, Sylva *et al* (2006) found that there was a significant and moderately strong relationship between the ECERS-E overall score and children's cognitive development, which not only provides a link between curricular quality and child cognitive outcomes but also

indicates that the ECERS-E is an instrument that can predict academic achievement. In the same study, the ECERS-R was found to be more related to social-behavioural development than to cognitive progress in the pre-school period, which means that the ECERS-R and ECERS-E capture different, but complementary aspects of quality relating to different aspects of child development and as such can be used in conjunction with each other to provide a fuller picture of environmental quality, which may then be linked to child outcomes.

Findings from Siraj-Blatchford's (2004) *Researching Effective Pedagogy in the Early Years* (REPEY) study indicate that in centres scoring high on the ECERS-E, staff engaged in pedagogical practices that included more 'sustained shared thinking' and more 'direct teaching', such as questioning or modelling. In high-scoring centres, children were also observed participating in more activities associated with early reading, emergent writing and active listening. Children in centres assessed as 'adequate' spent more time in activities associated with the 'physical development' and 'creative' curriculum. Thus the ECERS-E gives higher scores to pedagogical practices and activities where staff take a more active role in children's learning, including scaffolding young children's play, especially in the communication and literacy domains of the curriculum.

Staff and pedagogy

Research has found that higher levels of staff training and education are positively linked to positive child outcomes (Burchinal *et al*, 1996; Burchinal *et al*, 2000; Sammons *et al*, 2002; Sylva *et al*, 2004). Burchinal *et al* (2000) found that girls in classrooms with a lead teacher who had more years of education showed larger gains in receptive and expressive language over time, while the EPPE study team (Sammons *et al*, 2004b) found that the percentage of time qualified staff spent interacting with children was related to pre-reading progress at entry to school. Research has found that better educated staff has a pedagogical approach (incorporating specific characteristics) that promotes better outcomes for children (Marcon, 2002; IEA Pre-primary Project: Montie *et al*, 2006; REPEY: Siraj-Blatchford, 2004; Siraj-Blatchford and Sylva, 2004). The REPEY study found that settings with longer serving staff (over 3 years), who supported less qualified staff to provide a mix of staff-initiated group work and child-initiated play, had the most positive effect on children's social, cognitive and dispositional outcomes. Similarly, Montie *et al* (2006) found that children in settings where there was a greater proportion of free choice activities offered, adult-child interaction was positively associated with age-7 cognitive outcomes, while in settings where practice was predominantly adult-led, adult-child interaction was negatively associated with age-7 cognitive outcomes. The REPEY team found that in order for adults to provide effective learning and play opportunities for children, it is necessary that they have knowledge and understanding of how children learn. Moreover, these adults must have an awareness of the individuality of children and provide learning and play opportunities that are differentiated according to the child's needs, which has also been found in other studies (Flynn, 2007; Smyth, 2006). Smyth (2006) identified strategies to help children from asylum-seeking families to access the curriculum, which included staff allowing children to make choices and direct their own learning, and children being supported to develop their knowledge through creativity.

In the REPEY study, it was found that some adults more than others were likely to provide adult-child interactions that involved sustained shared thinking and open-ended questioning, which allow for the extension of children's thinking. Siraj-Blatchford (2009) defines sustained shared thinking (SST) as an effective pedagogic interaction, where two or more individuals (adults or children) 'work together' in an intellectual way to solve a problem, clarify a concept, evaluate activities or extend a narrative. Evidence suggests that the more successful settings were at providing the elements of pedagogic practice identified in the REPEY research, the greater the positive effect on the children's cognitive progress. Many of the REPEY settings were interested in a variety of curricula models, including the HighScope curriculum, which is the model curriculum being implemented by CDI programme services. This model includes many of the aspects of high-quality settings as identified in the REPEY study, including staff knowledge of how children learn (Key Developmental Indicators, small and large groups and child free choice), a behaviour policy that allows for staff to support children in rationalising their conflicts (6 steps to conflict resolution) and planning for individual child need (through the use of daily anecdotes, small and large group time and free play).

2.3 Parents

It has been consistently noted that parents and practitioners should work 'in partnership' (Siraj-Blatchford and McCallum, 2005; Cunningham and Davis, 1985; Cohen, 1988; Alexander, 1997). This involves pre-school staff and parents working together in a complementary way, sharing their expertise and knowledge of the child and the child's development. Effective early childhood settings are found to share learning aims with parents and support the home-learning environment (Anning *et al*, 2007; Kazimirski *et al*, 2008; Toroyan *et al*, 2004; Yoshikawa, 1995). For example, Yoshikawa (1995) found in a review of ECEC programmes that those that had the broadest range of positive effects for children and parents were programmes that provided good quality ECEC *as well as* support to adults. Love *et al* (2005) found that parents of children in an ECEC programme that also provided parent training and home visits supported their children's learning more and punished their children less.

Home-learning environment

There is a growing body of research evidence that points to the importance of the home-learning environment (Desforges and Abouchaar, 2003; Melhuish *et al*, 2001; Melhuish, 2010; Tizard and Hughes, 2002; Sammons *et al*, 2004a and 2004b). Studies have shown that children of low-SES families have less educational toys and books, and fewer educational experiences than their high-SES peers (Bradley *et al*, 2001; Brooks-Gunn and Duncan, 1997). In addition, according to Adams (1990), children from low-income families may have an average of 25 hours of one-to-one reading with parents by the time they start school, compared to 1,000-1,700 hours for middle-class children. Low-SES children can fall behind significantly before starting school and also in the summer holidays (Alexander and Entwisle, 1996).

A home-learning environment (HLE) is one where parents actively engage with their children in play and learning activities. The range and nature of possible activities can include talking and listening, reading stories, playing games, playing with letters, numbers and shapes, painting and drawing, and singing songs and rhymes. Findings from EPPE (Sammons *et al*, 2004b) demonstrated that higher quality home-learning environments are positively associated with social, behavioural and cognitive development. The HLE was a stronger predictor of child cognitive outcomes in Early Years children than either social class or parental education, which lead the EPPE to conclude that parents can supersede the negative effects of a low education or social class just by doing activities in the home with their child that promote cognitive development. This is an important finding if considered in the context of conducting interventions with families at risk due to multiple disadvantage because it suggests that if parents can be supported to improve the home-learning environment, this can bolster their children's cognitive development in a significant way. Indeed, when the children were followed up at age 11, the HLE still had a significant effect on social and behavioural scores (Melhuish, 2010).

Parent training

The Parents Plus Early Years Community Course was designed as 'an intervention for parents of pre-school children that could be equally relevant for children with and without behavioural and/or developmental difficulties' (CDI Parents Plus manual). Moreover, it builds on the research on parenting styles related to language acquisition and aims to increase parental confidence, enhance and support parent-child relationships and to prevent the onset of problems at an early stage. Parent training programmes have been linked to a reduction in children's behaviour problems and parental stress/mental health difficulties both internationally (Barlow *et al*, 2006; Gould and Richardson, 2006; Layzer *et al*, 2001; Webster-Stratton and Hammond, 1997) and nationally (Griffin *et al*, 2005 and 2010). Some research has found evidence that parent training programmes can help parents to feel supported as they become part of a social network (French, 2005 and 2006; McDonald *et al*, 1997). Webster-Stratton and Reid (2010) posit that consistency between the home and pre-school setting is extremely important in order to provide a lasting change in children's behaviour as a result of a parenting intervention.

Parenting programmes for families at risk from multiple disadvantage are best delivered in a school or pre-school setting as a strategic way of targeting more children in need (Webster-Stratton and Reid, 2010) and also a more diverse range of families (Cunningham *et al*, 1995). Lugo-Gil and Tamis-LeMonda (2008) found that both family economic resources and quality of parenting played a unique role in children's cognitive abilities at 14, 24 and 36 months in an ethnically diverse sample of 2,089 children from low-income families. They also found that parenting quality mediated the effects

of family resources on the children's outcomes at each age and the effects of parenting quality on the children's current cognitive scores remained significant even after controlling for parenting quality at earlier points in the children's life. This study suggests that in addition to supplementing family incomes or providing family services, pre-school intervention programmes, including parenting programmes for low-income families, are imperative in preparing children for school. As the intervention is targeted at all families in a setting, the programme is non-stigmatising and it not only offers the chance to target children before problems escalate, it also allows children with more developed social skills to model appropriate behaviours for those that may benefit most from an intervention (Webster-Stratton and Reid, 2010).

Again, Webster-Stratton and Reid (2010) have found that the success or failure of a parenting intervention can hinge on the characteristics of those who deliver the intervention. Well-trained motivated staff who have an ability to reach and communicate with parents, as well as formal education in the area of child development and social learning, are identified as ideal candidates for the role. Moreover, it is crucial that parental involvement becomes part of the philosophy of the delivering agency so that enough resources and time are devoted to getting the intervention right for the parents. Where programmes do not have the desired outcome, it may be because of variation in implementation across sites, which risks dilution of the outcome effects (Valentine and Thomson, 2009). Indeed, Webster-Stratton and Reid (2010) caution that the programme must be faithful to the manual in order to achieve desired results. If deviations from recommended dose or implementation methods occur, the positive results of previous studies will not be replicated, according to the authors.

2.4 Child outcomes in similar intervention studies

Cognitive and social outcomes

A study by Loeb *et al* (2007) examined whether there are optimal levels of duration and intensity with regard to children's attendance of pre-school or childcare centres. They analysed data from the Early Childhood Longitudinal Study, Kindergarten Cohort (ECLS-K) of 14,162 children who began primary school/kindergarten in 1998. Their analysis revealed consistent effects for duration of pre-school attendance for all income groups, with children who entered a centre between the ages of 2 and 3 showing the strongest cognitive benefits. Children who started at an earlier age did not exhibit any greater benefit than those who started between 2 and 3. Some gains in reading and maths skills (and hardly any negative effects) were associated with additional hours per week (at least 30 hours per week for at least 9 months of the year) in a centre for children from low-income families. This did not apply across income levels. Children from high-income families did demonstrate some gains in pre-reading and maths skills when they attended the centre for 15-30 hours per week; there were no further gains evident for attendance of 30 hours or more and considerably more behavioural problems were associated with these additional hours. The findings of this study suggest that children can benefit more from interventions if they start before the age of 4 and that additional hours in these environments can be very beneficial in terms of cognitive gains for children from disadvantaged areas.

Loeb *et al* (2004) collected data from maternal interviews, child assessments and observations of centre care and home-based care settings with 451 families in California and Florida where low-income mothers were entering a welfare-to-work Government initiative programme. Cognitive and language assessments were carried out with the children at age 2.5 years using subscales from the MacArthur Communicative Development Inventory (Fenson *et al*, 1994) and again at age 4 using the Bracken Basic Concept Scale (Bracken, 1998). The children's school-readiness was assessed using the Family and Child Experiences Survey (FACES). The CBCL was used to assess social development. The ECERS-R was used to assess childcare settings and the Arnett Scale of Caregiver Behaviour (Arnett, 1989) was used to examine the social interaction between child and caregiver. Results showed a consistent, strong positive relationship between rates of child cognitive development and participation in centre-based childcare programmes. Results were strongest for measures of school-readiness and for children who were in the centre for both data collection points (2-year period). In addition, they found that childcare quality also affected cognitive and language development. This appeared to be associated with the social interaction between the child and the caregiver, as well as the childcare provider's educational level.

In a UK study, Evangelou and Sylva (2007) found that children from disadvantaged areas whose parents participated in a parental education programme for two years leading up to school entry showed significantly greater progress in verbal comprehension, vocabulary and numeracy development compared to children with similar demographic characteristics whose parents had not participated. The study evaluated the impact of the Peers Early Education Partnership (PEEP) Programme, an early learning intervention for families with children aged up to 5 years which focuses on child development by supporting parents/carers to develop three particular aspects of learning with their children: literacy and numeracy, self-esteem and learning dispositions. The study included 64 children (aged 3-5) who had access to the PEEP Programme and a comparison group of 83 children from a nearby area with similar demographic characteristics who were not participating in PEEP. A longitudinal quasi-experimental design was used to examine the impact of the intervention on educational achievement using the Block Building, Picture Similarities, Verbal Comprehension, and Naming Vocabulary subtests from the BAS II; the Bryant and Bradley Phonological Awareness rhyme and alliteration tasks; the ASBI to measure improvements in pro-social behaviour; and the ECERS-E to measure the quality of pre-school. Results showed that PEEP had a significant effect on the children's literacy and numeracy skills over a 2-year period. The study highlighted the importance of working in partnership with parents, having highly trained staff and an explicit curriculum in creating an effective early learning intervention. Results showed that attending a pre-school enhanced general development compared to no pre-school experience, and that the duration (in months) of attendance was a factor, with an earlier starting age (between 2 and 3 years) being related to better cognitive development. Duration of pre-school attendance was found to continue to affect academic skills, and to a lesser extent social and behavioural development, when assessed at the end of the second year in school. They also found that children from disadvantaged areas benefited significantly from attending good-quality pre-schools, particularly in pre-schools with children from a range of different social backgrounds. Results showed that the number of children that were 'at risk' of developing learning difficulties fell from 1 in 3 at the time of beginning pre-school to 1 in 5 at the beginning of primary school, suggesting that pre-school could be an effective intervention to reduce the special educational needs of vulnerable children (Evangelou and Sylva, 2007).

The EPPE study (Sammons *et al*, 2004b) also examined the effects of pre-school quality and specific practices/pedagogy on children's development through the analysis of 12 case studies of the settings which produced the most positive child outcomes in the main study. They found that there was a significant relationship between high-quality pre-schooling and enhanced cognitive and social/behavioural development. In addition, children made more progress in settings with highly trained staff, and in particular highly qualified managers, and these settings also scored higher in quality ratings. The quality of the pre-school was also significantly related to the children's scores on standardised measures of reading and maths at age 6.

Another aspect of the EPPE study looked at the impact of the home-learning environment on children's development. This was achieved through parent interviews and questionnaires to collect detailed information on childcare histories and the individual characteristics of the child, their family and their home. The authors' findings indicated that there was a stronger association between the child's cognitive and social development and the home-learning environment than there was with the parents' educational or occupational level. Children whose parents engaged them in home-learning activities on a regular basis were less likely to be at risk for special educational needs and higher intellectual and social/behavioural scores were achieved by children whose parents engaged in such activities as reading to them, playing with letters or numbers with them, teaching them nursery rhymes and visiting the library together.

A study by Woolfson and King (2008) to explore the impact of an extended pre-school provision pilot programme on developmental outcomes found that children who participated in the programme showed good progress on cognitive, receptive and expressive language, and social-emotional outcomes with medium to large effect sizes. The pilot programme was to run for a 2-year period in three of Scotland's most deprived local authority areas, with the key aim of providing positive pre-school experiences one year early for vulnerable children and supporting their parents. Children in the intervention group ($n=108$) started attending one of the pilot programmes between August and November 2007, at the age of 2-2.5 years. Children of the same age who were eligible for the pilot provision but had not been allocated places and did not attend any other funded pre-school programme for 2-year-olds were recruited as the comparison group ($n=66$). Staff at participating pre-schools who were familiar with the children completed the ASBI questionnaire for each of the children in order to measure social competence. It was found that children in the intervention group showed significant improvement in their scores on the positive behaviour subscales (*express* ($t(68) = -10.42$, $p < 0.001$); *comply* ($t(69) = -10.46$), $p < 0.001$; *pro-social* scores ($t(68) = -11.31$, $p < 0.001$)), with large effect sizes ($r = 0.8$) and a significant reduction in negative social behaviours measured by the *disrupt* ($t(68) = 3.99$, $p < 0.001$) subscale with a medium effect size ($r = 0.4$).

Language and literacy

Numerous studies have found that children with problems learning literacy skills have delayed speech and language skills in early childhood (Gallagher *et al*, 2000). A study by Locke *et al* (2002) investigated the extent to which spoken language skills of children from deprived areas are delayed in comparison to the general population and to their own cognitive skills. The CELF-P^{uk} and the BAS II were used to assess the cognitive ability and language skills of 240 children, aged 3-4, in four nursery schools in areas of social and economic deprivation in the UK. The authors found that, on average, children who had been reared in poverty performed well below the expected level in the general population and more than half could be diagnosed with moderate to severe language delays. However, the children's cognitive abilities were comparable to the general population, indicating support for the link between low SES and language delays. The authors suggested that an inclusive approach should be considered, whereby speech and language therapists (SLTs) work in schools as consultants and facilitators to support staff in assessing, monitoring and promoting language in the nursery environment. Studies have shown that training parents and teachers to improve pre-literacy experiences for low-SES children can promote emergent academic skills (McCormick and Mason, 1986; Morrow and Young, 1997; Whitehurst *et al*, 1994).

A study by McIntosh *et al* (2007) showed that an intervention can benefit from joint working between Early Years practitioners and speech and language therapists. Pre-school teachers implemented a programme designed by a speech therapist, who refined the intervention in response to teachers' feedback. The programme had a positive impact on language and phonological awareness among disadvantaged children. Bickford-Smith *et al* (2005) investigated how effective a directly taught language programme delivered in a setting that promotes a language-rich environment would be in increasing the use and understanding of early vocabulary in children with language delays. The study was conducted as part of a 10-week 'Sure Start' early intervention programme in a nursery in a deprived area of outer east London. Children (n=33) who attended the morning session received the intervention and children (n=32) attending the afternoon session were used as a comparison group. The children were aged between 3.5 to 4.4 years at the start of the study. Children were assessed by a qualified SLT and an educational psychologist. The measures used included subtests from the Clinical Evaluation of Language Fundamentals Assessment Pre-School (CELF-P) (Wiig *et al*, 1992) to assess receptive language and expressive vocabulary and the Picture Similarities subtest from the BAS II to differentiate children with language delay as opposed to possible delay in both language and non-verbal reasoning skills. The initial assessments revealed that nearly one-third of the children exhibited some degree of language delay and one-fifth had delayed language as well as delayed non-verbal skills (as measured by the single subtest from the BAS II). Results following the language intervention showed that children with language delays made more progress on all the CELF-P subtests and significant progress was seen in receptive language, indicating that small group interventions can improve language skills. The authors suggested that educational psychologists, SLTs and Early Years practitioners can develop effective holistic interventions by working together and this could make a significant difference to children who are at risk of underachieving in education from an early age.

2.5 Process evaluation

The primary purpose of a programme evaluation is to determine the quality of a programme by formulating a judgement (Stake and Schwandt, 2006). Programme evaluation is at times called into question as an original process, whose primary function is the production of legitimate and justified judgements which serve as the bases for relevant recommendations. Guba (1972) and Scriven (1995) attribute this questioning to the difficulty evaluators have not only in determining evaluands, but also in developing the criteria required to generate a judgement. Process evaluations are aimed at enhancing a programme or overall programme evaluation by understanding the programme implementation more fully. Process evaluations measure what is done by the programme and for whom these services are provided. Ideally, process evaluations assist in the identification of active ingredients of treatment or intervention, and assess whether a programme is meeting accepted standards (WHO, 2000). In general, process evaluations pose questions in two areas: coverage and process. The evaluation of process can reveal a great deal about a programme or intervention in a community setting (Suchman, 1967) and is often particularly useful in situations where a traditional summative evaluation may conclude that a programme did or did not work. In these situations, the process evaluation can help to ascertain what exactly made an intervention so successful or conversely why an intervention did not produce an intended effect or outcome.

Many examples of intervention studies have reported no effects when, in fact, the lack of results stemmed from implementation failure, or Type III error, rather than shortcomings in the intervention (Dobson and Cook, 1980; Kassebaum *et al*, 1971; Quay, 1977). Studies such as Rohrbach *et al* (1993) have demonstrated the importance of process evaluation to the understanding of results obtained. The study itself examined issues related to diffusion of a psychosocial-based substance abuse prevention programme and found that integrity of programme delivery was positively associated with immediate programme outcomes. When compared to non-implementers of the programme, implementers reported fewer years of teaching experience and strong self-efficacy, enthusiasm, preparedness, teaching methods' compatibility and principals' encouragement. This illustrates the need to incorporate examination of programme implementation and process into the overall evaluation design to enhance the understanding of outcomes. This aspect of process evaluation generates further learning and helps to remove a sense of fear of failure that traditional summative or formative evaluation alone can engender among participants.

Process evaluation is also a useful method to examine theoretical constructs that may underlie a programme or intervention. Through examining the process and what works effectively or what does not work as well, it is possible to identify any constructs that make a difference in a theory-informed programme and how much impact these constructs may influence the programme. It also allows for identification of mediators that may influence the outcomes in differing conditions. Consequently, this can improve conceptualisation of the intervention being evaluated, contributing also to theory development and validation (Harachi *et al*, 1999). There is growing support for the premise that programme evaluations are more useful when grounded in a theoretical context (Finney and Moos, 1989). The theoretical context elucidates explanation or interpretation of the mechanisms through which the intervention effects occur. A programme evaluation enhances its utility by examining the theoretical basis of the programme and the intervening and contextual factors that mediate the relationship between the programme and the ultimate outcome. Thus, information generated from this type of evaluation can improve intervention conceptualisation while it contributes to theory development and validation.

Process evaluation can also be particularly useful in research such as this, in which there is a multi-method intervention. Its usefulness lies primarily in identifying the effects of various methods singly, disentangling methods used and identifying what has been more or less successful in an intervention than other methods employed. Through doing so, interactions that also occur between methods and the impact that this makes on an intervention can be extrapolated and explored further, enriching the results generated and informing future research and practice.

Approaches to carrying out a process evaluation of an intervention often include, among others, examining participation in the intervention, dose received by participants, fidelity to the initial implementation plan, compatibility of setting with the intervention, reach of the intervention, time spent on programme activities, use of intervention materials, level of participation in the intervention and external factors in order to gain a comprehensive view of the process and how it was implemented. However, there is no one standardised approach to carrying out a process evaluation and there are no standardised measures or methods of reporting process evaluative results available, leading to a great diversity in how process evaluation is carried out. This can be a very attractive and useful aspect of using process evaluation since evaluation methodology can be tailored to the specifics of a particular piece of research, extrapolating the qualities particular to that study and lending a richness to the type of data that is available in the literature. Consequently, there is no way of directly comparing previous process evaluation studies that are currently available – a negative of the lack of a standardised approach to process evaluation.

The area of process evaluation is one that is developing and emerging as a standard and central programme evaluation component. As the field develops, process evaluation methodology is growing towards a more standardised approach rather than the earlier, more exploratory methodology. Steckler and Linnan (2002) have attempted to fill these knowledge gaps by providing a definition of key process evaluation components and an overview of key steps in designing and implementing effective process evaluation efforts. The key process evaluation components described are context (including efforts for recruitment), reach, dose delivered, dose received, the fidelity of the intervention and implementation.

Steckler and Linnan (2002) have also outlined the primary steps in designing and implementing a process evaluation, lending process evaluations a sense of uniformity. In the first step, a conceptual model of the intervention or a logic model is built (Earp and Ennett, 1991). Secondly, measurable, realistic process objectives to be assessed for each intervention

component should be outlined. The third step involves the development of relevant process evaluation questions to be answered. Prioritisation of the process evaluation questions is to be done in collaboration with input from key stakeholders along with the evaluation team. Measurement tools to assess the process objectives and process evaluation questions are then selected, based on the validity and reliability of the measure along with feasibility. In the next step of the planning process, a comprehensive process evaluation plan is formulated that indicates the practicalities of what will be evaluated and how. In the final step of the process evaluation, evaluators analyse and then report on the data, developing easily accessible reports that will be shared with study participants and programme staff members, incorporating the ethos of community-based participatory research (CBPR). A recent publication by Saunders *et al* (2005) demonstrated a particularly user-friendly approach to planning process evaluation for health promotion programmes, based heavily on the planning model of Steckler and Linnan (2002), and like the CBPR, it can easily be adapted to social and educational research.

Process evaluation will form a key part of the overall evaluation being carried out on the CDI *Early Years* Programme. In the current study, process evaluation will combine both quantitative and qualitative assessments, providing data on the strengths and weaknesses of the overall programme being implemented. The process evaluation will apply a variety of methods to gather a comprehensive and continuous record of the CDI *Early Years* initiative. Methods will include a small number of face-to-face interviews, focus groups and ongoing review of documentation, processes and participation in activities. The process evaluation will also seek to explain quantitative findings through qualitative analysis of information under the headings utilisation, fidelity and organisation.

Chapter 3: Methodology of evaluation of *Early Years Programme*



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3.1 Research design

The evaluation is two-pronged, including both a quantitative assessment of the programme and a qualitative assessment of the implementation 'process'. The evaluation was designed to determine how the programme met the aims of CDI as outlined in Chapter 1, which were:

- to develop new services to support children and families;
- to encourage better integration of education, social care and health provision;
- to promote community change initiatives to improve the physical and social fabrics of the neighbourhoods in which children live, play and learn.

Quantitative findings are organised according to the relevant research questions and categorised by their sample group, whether it be child, parent or Early Years service. Qualitative findings are organised under the headings utilisation, fidelity and organisation.

3.2 Research questions

For the purposes of this report, the research questions are outlined below and organised according to the relevant participant group:

1. What is the profile of the whole sample of parents and children at baseline?
2. Did randomisation succeed in respect of the child, parent and Early Years service sample at baseline?

Children

3. Did (and to what extent did) participation in the CDI *Early Years* Programme result in better outcomes in terms of child development (cognitive, language and social) after 2 years of programme implementation as compared to the control group?

Parents

4. Did parental participation in the CDI parental component result in better outcomes (parental stress, parent estimation of child social skills and behaviour, home-learning environment) as compared to the control group of parents?

Early Years services

5. Did service participation in the implementation of the CDI *Early Years* Programme result in better outcomes in terms of environmental quality (curricular, process and structural) as compared to the control group?

Process research questions

Through consultation with parents, Early Years practitioners and CDI staff, the process evaluation will seek to answer the following:

1. What was the experience of parents (where relevant), Early Years practitioners and CDI staff in relation to programme utilisation, fidelity and organisation?

Additional process research questions are outlined below according to the categories of utilisation, fidelity and organisation.

Utilisation

2. Did the target group utilise the programme and to what extent was this the case?

Fidelity

3. Was there a match between manual content and programme implementation? If so, in what way? If not, in what way?
4. In the case of deviations from the manual, did patterns evolve?
5. What was well implemented and why?
6. What supports were put in place to ensure manual fidelity?

Organisation

7. Did the organisational structure of the programme support the fidelity and implementation of the programme? If so, in what way? If not, in what way?

3.3 Research instruments

The CDI *Early Years Programme* explicitly sought to improve children's ability to learn and to make them more ready for school, both socially and cognitively. School readiness is a multi-dimensional concept reflecting the holistic nature of children's development (Janus and Offord, 2000). For this reason, the evaluation used multiple measures to assess children's readiness to learn which reflect the multiplicity of the concept. The following instruments were used to assess the children at baseline, after one year and again after 2 years (see Table 3.1). Further detail on the research instruments and fieldworker training is provided in Appendix 1.

3.3.1 Child level

Table 3.1 shows the instruments used to assess children during the course of this evaluation.

Table 3.1: Child assessment instruments used in the evaluation

Assessment name	Assessment content	Programme outcome
British Ability Scales 2nd Edition [BAS II] (Elliot <i>et al</i> , 1996): Block Building Verbal Comprehension Picture Similarity Naming Vocabulary Early Number Concepts	Cognitive development battery Spatial skills Verbal skills Pictorial reasoning skills Verbal skills Reasoning, pre-number skills Pre-reading skills	Developmentally appropriate cognitive skills Necessary emergent language and literacy skills
Rhyme and Alliteration (Bryant and Bradley, 1985) Lower letter recognition (Clay, 2002 and 2006)		
Adaptive Social Behaviour Inventory [ASBI] (Hogan <i>et al</i> , 1992) Strengths and Difficulties Questionnaire [SDQ] (Goodman, 1997)	Emotional adjustment Pro-social behaviour Hyperactivity Conduct Peer relationships	Emotion management Behaviour regulation Positive peer relationships Positive adult-child relationships

The **British Ability Scales** (Elliot *et al*, 1996) were designed as a test battery that would provide a meaningful profile of specific cognitive abilities based on free-standing subtest scores rather than a summative IQ score. The length of assessment was also considered in the design, with age-related starting points, decision points and alternative stopping points, which reduce the number of items administered and mean that assessment time is kept to a minimum. Decision points allow the assessor to stop the assessment once it becomes clear that the child has reached items that are too difficult for them and therefore protects the child's self-esteem and motivation (Hill, 2005). This feature reduces the negative impact of repeated failure on the child and is a powerful argument for the use of the instrument in disadvantaged populations. This instrument was used in Northern Ireland with 800 children in the EPPNI study (Effective Preschool Provision, Northern Ireland, 1998-2005) and in the EPPE (Effective Provision of Preschool Education, 1997-2003) study with 3,000 children in England, and the findings illustrate that it is a reliable measure for assessing the ability of young children from age 3-5.

Rhyme and Alliteration (Bryant and Bradley, 1985) relates to phonological awareness, which is the understanding of different ways that oral language can be divided into smaller components and manipulated. Bradley and Bryant (1983 and 1985) found that there is a strong relationship between children's sensitivity to rhyme and alliteration when they begin school and their progress in learning to read over the following three years, even controlling for intelligence. Thus, while phoneme awareness develops through learning to read, some awareness of onset and rhyme appears to be already present before reading begins (Kirtley *et al*, 1989). This suggests that the traditional infant classroom emphasis on rhymes (nursery or otherwise) is even more important in the development of pre-reading skills and supports the strategy of heightening beginning readers' awareness of sounds in words by pointing these out to them (Wray, 1994). The measure is part of the battery of assessments used in the EPPE study, mentioned above. This test is more suited to a post-test situation since it is most commonly administered after children are at least 3 years and 5 months of age.

Letter Identification (Clay, 2002 and 2006): Marie Clay's *Observation Survey of Early Literacy Achievement* incorporates 6 literacy tasks, all of which are necessary for describing a young child's emerging reading and writing behaviours. The Letter Identification task is used to determine which letters the child knows and the preferred mode of identification, and is suited to older pre-school and school-age children.

The **Adaptive Social Behaviour Inventory (ASBI)** is a standardised inventory for infant pre-school social development that is completed by the child's key worker or pre-school teacher. The ASBI was developed with the intention of identifying children's social skills in terms of social competence as distinct from social pathology. The ASBI is worded for ease of use with populations with literacy problems and has been validated for use in pre-school settings (Greenfield *et al*, 2004). Each of the 30 items on the inventory represents a directly observable behaviour, which contribute to the three factors of Express, Disrupt and Comply, the internal validity of which was identified by Hogan *et al* (1992) and later supported by subsequent independent research (Greenfield *et al*, 2004). This scale maps onto social and behavioural constructs, such as emotional maturity, communication skills and social competence.

3.3.2 Parent level

The **Strengths and Difficulties Questionnaire (SDQ)** is a behavioural tool that is used to screen the behaviour of children and teenagers, and is commonly completed by parents or teachers of children. Parents completed the SDQ in this evaluation. The SDQ contains statements about 25 psychological attributes, some positive and others negative. These 25 attributes are divided between 5 scales: emotional symptoms, conduct problems, hyperactivity/inattention, peer problems, and pro-social behaviour. Respondents indicated their level of agreement with the 25 items by choosing a response on a 3-point Likert scale, which ranges from 1 to 3 (not true, sometimes true and certainly true, respectively). In addition, the SDQ can contain an impact supplement, which asks whether the respondent thinks the young person has a problem, and if so, enquire further about chronicity, distress, social impairment and burden to others. This provides useful additional information for clinicians and researchers with an interest in psychological or psychiatric problems, and is a useful tool in the review of services. Advantages of the SDQ are its use in similar studies, both nationally (Kelleher and McGilloway, 2006; Sharry *et al*, 2005) and internationally (Kiernan and Mensah, 2008; Jones *et al*, 2007; Stewart-Brown *et al*, 2004, Martin and Sanders, 2003). In addition, since the SDQ was used in the Irish national longitudinal study of children, *Growing Up in Ireland*, there are norms available for a large representative sample of Irish children.

The **Parent Stress Scale** (Berry and Jones, 1995) is a self-report scale that contains 18 items representing positive themes of parenthood (emotional benefits, self-enrichment, personal development) and negative components (demands on resources, opportunity costs and restrictions). Parents are asked to agree or disagree with items in terms of their typical relationship with their child and to rate each item on a 5-point scale (strongly disagree, disagree, undecided, agree and strongly agree). The 8 positive items are reverse scored so that possible scores on the scale can range between 18-90. Higher scores on the scale indicate greater stress. The Parent Stress Scale demonstrated satisfactory levels of internal reliability (0.83), and test-retest reliability (0.81) upon development. The scale demonstrated satisfactory convergent validity with various measures of stress, emotion and role satisfaction, including perceived stress, work/family stress, loneliness, anxiety, guilt, marital satisfaction, marital commitment, job satisfaction and social support. Discriminant analyses demonstrated the ability of the scale to discriminate between parents of typically developing children and parents of children with both developmental and behavioural problems (Berry and Jones, 1995). The scale has been used in similar studies nationally (Griffin *et al*, 2010; Sharry *et al*, 2005).

The **Home Learning Environment Index** (adapted from Melhuish *et al*, 2001) includes questions concerning the frequency with which children engaged in 14 activities: playing with friends at home; playing with friends elsewhere; visiting relatives or friends; shopping with parent; watching TV; eating meals with the family; going to the library; playing with letters/numbers; painting or drawing; being read to; learning activities with letters; learning activities with numbers/shapes; learning activities with songs/poems/nursery rhymes; and having a regular bedtime. Frequency of activities are coded on a 7-point scale for most items (0 = not at all; 7 = very frequent). The 7 activities that provide clear learning opportunities (frequency read to, going to the library, playing with numbers or letters, painting, being taught letters, being taught numbers, being taught songs/poems/rhymes) had significant positive effects on child outcomes in the EPPE study and the 7 scores were added to produce an index. Based on the experience of the Principal Investigator with the EPPE project and as a result of a piloting of the scale, the index was slightly adapted for the purposes of the current research. In the case of two of the items, the rating scale was reduced to a 5-point scale and a 4-point scale, which was more meaningful in the context of the item content. For the item on frequency of going to the library, the response could range from 1 to 4, with 4 indicating a weekly visit to the library, given that a daily visit to the library would be quite unlikely. Similarly, the range for the item on reading at home with the child was changed to a 5-point scale, which allowed for the possibility that parents read with their child more than once a day, but also, at the other end of the scale, less often than once a week. In addition, the frequency of playing with letters and numbers was separated out into two separate items since they represent quite different activities, which target different skill areas.

3.3.3 Early Years service level

Data to support this aspect of the evaluation were collected from a triangulation of methodologies, including Early Years practitioner focus groups and independent observation of service practice through the use of environmental quality rating scales (see Table 3.2). Overall, environmental service quality in each participating service was examined through the administration of the **Early Childhood Environmental Rating Scale – Revised edition (ECERS-R)** (Harms *et al*, 1998) and **Early Childhood Environmental Rating Scale – Extension (ECERS-E)** (Sylva *et al*, Revised edition, 2006). This provided an independent rating of service quality over time.

Table 3.2: Service assessment instruments referenced in this report

Assessment name	Assessment content	Programme outcome
Early Childhood Environmental Rating Scale – Revised edition (ECERS-R) (Harms <i>et al</i> , 1998)	Space and furnishings Personal care routines Language reasoning Activities Interaction Programme structure Parents and staff	Staff:child ratios Practitioner practice: Adult–child interaction Learning activities (language attainment, gross motor)
Early Childhood Environmental Rating Scale – Extension (ECERS-E) (Sylva <i>et al</i> , Revised edition, 2006)	Literacy Mathematics Science and environment Diversity	Curricular content Practitioner practice: Learning opportunities related to number, pre-reading and supporting diversity
The Arnett Caregiver Interaction Scale (CIS) (Arnett, 1989)	Positive relationships Punitiveness Permissiveness Detachment	Practitioner practice: Adult–child interaction Conflict management

The **ECERS-R** has been used extensively as a means of measuring quality of provision for 3-5 year-olds in early childhood settings (EPPE England, 1997-2011; MEEIFP Wales, 2004-2006; EPPNI Northern Ireland, 1997-2004). The ECERS-R consists of 43 items, which assess 7 aspects of centre-based care and education for pre-school children. Many studies have found that the ECERS-R predicts children's development. These include the National Child Care Staffing Study (Whitebook *et al*, 1989), the Cost, Quality and Child Outcomes Study (Phillipsen *et al*, 1997) and the Effective Provision of Pre-school Education (EPPE) Study (Sammons *et al*, 2002 and 2003).

The **ECERS-E** was developed by the EPPE research team to supplement the ECERS-R. It was an extension of the original in that it was more explicitly 'cognitive' in its assessment of play-based learning environments. Moreover, it was designed to measure the processes that lead to children's cognitive and social development in the context of an early childhood curriculum and allowed for the assessment of early childhood practice that was aimed at cultural and intellectual diversity (Sylva *et al*, 2006).

Both the **ECERS-R** and **ECERS-E** are based on a conceptual framework that takes account of pedagogical processes and curriculum. Both tools provide useful information about structural aspects of the settings and should provide evidence for or against environmental aspects of the intervention programme, which can feed into future staff development, practice setting layout and structural design. The **ECERS** instruments have been used extensively across 20 countries and are currently being widely used in countries such as the USA, Singapore and UK for both research purposes and self-assessment and regulation.

The **Arnett Caregiver Interaction Scale (CIS)** consists of 26 items forming 4 subscales, each of which measures a different aspect of caregiver–child interaction: positive relationships (indicating warmth and enthusiasm in interaction with children); punitiveness (indicating harsh or over-controlling behaviour in interaction with children); permissiveness (indicating avoidance of discipline and control of children); and detachment (indicating lack of involvement in interaction with children). The CIS has been associated with child outcomes in the EPPE study (Sylva *et al*, 1999).

Early Years practitioner focus group

A focus group script was developed by the evaluation team and covered topics under the headings CDI, Training, Manual, Programme structure, Additional supports, Parents and Miscellaneous. Open-ended questions were asked by the focus group facilitator (lead researcher) and where necessary, a range of pre-determined prompts were used. Miscellaneous questions offered an opportunity for the Early Years practitioners to provide extra information that had not been elicited by previous questions. The focus group script was piloted prior to data collection with other researchers and with one group of Early Years practitioners who were not involved in the research, and changes were made based on the piloting process.

3.4 Data collection with the sample

Evaluation data were collected at three levels – the child level, the parent level and the Early Years service level – each of which is discussed below.

3.4.1 Child-level data collection

Child-level data collection consisted of both one-to-one child assessments and key worker ratings of children's social and behavioural development. Child assessments were carried out by trained fieldworkers (or the lead researcher) who visited Early Years services by prior arrangement in October or early November 2008 or 2009 (*see Appendix 1 for data collection schedule*). Mid-phase assessments happened the following May (2009 and 2010) after the children had completed one year of Early Years education and again the following May (2010 or 2011) after 2 years of Early Years provision. Where possible, all follow-up assessments happened in Early Years services, but in cases where children had left the Early Years services for primary school or a new Early Years service, these assessments either happened in the home or in the new educational setting. One-to-one assessments took place in the child's usual Early Years service room² at a child-sized table at which individual children and the fieldworker sat side by side. Assessment on the 5 BAS subscales took approximately 20 minutes per child and 4-5 children were assessed per day. Therefore, a fieldworker usually carried out assessments over at least three consecutive days in the same Early Years service. Children's key workers were asked to fill out the social and behavioural questionnaire on the children in their key groups and these completed questionnaires were collected by fieldworkers on the last day of child assessment fieldwork³.

3.4.2 Parent-level data collection

Parents participated in a parent interview to coincide with their child's entry to the Early Years service, which included questions on family structure, ethnicity, parental education and employment, as well as the parent-level instruments of Parental Stress Scale, Strengths and Difficulties Questionnaire and the Home Learning Environment Index (*see Section 3.3*). These interviews were conducted one-to-one with a trained fieldworker either in the Early Years services or in the home. A minority of parents (n=27) opted to complete the interview over the telephone and this option was facilitated by the research team. Parents were interviewed 2 years later (upon completion of the CDI *Early Years Programme*) and were asked questions about their experience of their child attending an Early Years service, in addition to re-administration of the same three instruments that had been administered at baseline. Control group parents were interviewed at the same points in time as parents in the matched intervention group to allow for a comparison of parental outcomes across conditions.

² In one setting, the size of the Early Years service room did not allow for the accommodation of an assessment table, therefore assessments occurred in an adjacent room and doors were left open at all times and children were free to move between the rooms.

³ In the case of one service, questionnaires were returned by post due to not being initially completed upon fieldworker departure.

3.4.3 Early Years service-level data collection

Early Years service quality assessments occurred to coincide roughly with child assessments, i.e. at the beginning of the Early Years service year (October 2008 or 2009), after the first Early Years service year (May 2009 or 2010) and again after the second year of Early Years service provision (May 2010 or 2011). The ECERS-E was administered at all 3 points in time, but due to the more structural nature of the ECERS-R, it was decided to implement this only at the beginning of the Early Years service year and 2 years later given that the majority of items it contained were less likely to change over short periods of time. The opinions of intervention group Early Years practitioners were also sought through a focus group after the first year of Early Years service provision and again after the second year of programme implementation. Roughly 6-8 practitioners attended each focus group and multiple sessions were held to facilitate the attendance of as many practitioners as possible.

3.5 Consent

The evaluation team met with intervention and control Early Years practitioners at a session which provided them with information on the type and level of involvement of practitioners, families and children in the research process. Early Years practitioners agreed to support the consent process by distributing consent and information letters to parents, facilitating access to hard-to-reach parents, following up with parents and accepting returned consent forms on behalf of the research team.

3.6 Analysis techniques

Effect sizes were calculated for significant main effects based on Cohen's *d*, using Thalheimer and Cook's (2002) approach.

3.6.1 Early Years service quality data analysis

Since the sample of services was small ($n=18$) and the data were non-normally distributed, non-parametric tests of difference were used. The Mann-Whitney test was used to determine whether there were between-group differences at baseline (i.e. to check if randomisation had succeeded). As ANOVA is robust to violations of normality (Glass, 1972) and yields a relatively unaffected *F* when group sizes are equal (Donaldson, 1968), it was decided to proceed with this method of analysis of longitudinal data. Complex 2x2 and 2x3 ANOVAs were used to analyse changes in ECERS-R and ECERS-E and CIS scores between-groups and within-groups over time respectively. The post-hoc tests of within-group changes in score were analysed using the non-parametric Wilcoxon-signed rank test.

3.6.2 Child data analysis

All outcome data from the 3 phases of assessment were imputed using multiple imputation techniques (*see Appendix 3*). In the case of the Adaptive Social Behaviour Inventory, it was decided to impute the ASBI Disrupt and ASBI Pro-social scales only as the Pro-social scale is the sum of the Express and Comply scales. To determine between-group differences at baseline, mid-phase and end phase, independent *t*-tests were utilised, as appropriate. Because SPSS does not provide pooled variances for *F* tests, such as a mixed 2x3 ANOVA, hierarchical linear modelling in the HLM 7 computer programme was used instead, in which each end-phase child outcome score was entered individually as the dependent variable and condition (among other predictors) was entered as a dummy variable. As HLM estimates linear equations that explain outcomes for members of groups as a function of the characteristics of the groups as well as the characteristics of the members, it is particularly suited to cluster trials, where children are nested within Early Years services. The advantage of HLM lies in its ability to accurately estimate the effects of independent variables at each level by modelling the between-service and within-service variance at the same time, thus reducing the biases caused by conventional regression approaches. Post-hoc *t*-tests were used to compare the direction and level of change in scores.

3.6.3 Parent data analysis

Missing data were imputed, where possible, on all end-phase outcome data only. This was not possible in the case of some outcome variables (*see Appendix 3*). HLM modelling was also used as described above.

Chapter 4: Quantitative Findings



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The findings in this chapter represent the main data collected by the evaluation research team, with the aim of answering the research questions given in Chapter 3.

4.1 Parent sample – baseline characteristics

There were 310 parent interviews in total. Of these 84.5% (n=262) were natural mothers and 8.4% (n=26) were natural fathers (*see Table 4.1*). There were two adoptive mothers and three grandmothers interviewed. In the remaining 5.5% of cases (n=17), both the mother and father were interviewed. More fathers (n=32) in the intervention group tended to participate in interviews than in the control group (n=11), either with or without the child's mother (19% compared to 7.8%). Conditions were well-matched for ethnic background, with similar proportions of families from both White Irish and Black African backgrounds. Since there were no significant differences between conditions for these backgrounds, randomisation was successful for the majority of the sample (*see Appendix 3 for further information on family and parent characteristics*).

Table 4.1: Parent profile, by condition

	Total		Intervention		Control	
	No.	%	No.	%	No.	%
Mothers	262	84.5	133	79.2	129	90.8
Fathers	26	8.4	16	9.5	10	7.1
Adoptive mother	2	0.6	1	0.6	1	0.7
Grandmother	3	0.9	2	1.2	1	0.7
Mother and father together	17	5.5	16	9.5	1	0.7
Total	310	100	168	100	142	100

4.1.1 Language

Similar numbers of families in intervention and control groups spoke English as their first language and there was no significant difference between groups for those who spoke English as a first language and those who spoke another language as a first language, indicating that randomisation had been successful in this respect.

4.1.2 Family type

Census figures (CSO, 2006) indicate that 30% of all households in Tallaght West are headed by a lone parent, compared to 34.2% in the whole sample in the current research. Similar numbers of families in both intervention and control groups had children living with both parents. There was no significant difference between conditions in terms of whether a child lived with both parents or a lone parent.

4.1.3 Parental characteristics

Age

The average age of mothers for the whole sample (n=136) was 30.6 years, compared to 33.7 years for fathers (n=97). This did not differ significantly across conditions or across cohorts. Groups were not well-matched in relation to the education level of mothers in terms of those who had primary education only, with more intervention mothers (14.2%) than control mothers (6.3%) having a primary school level of education only (*see Appendix 3*). This difference was controlled for by

factoring maternal education into outcome models and results indicated that it did not account for any differences in child outcomes. Since information was provided on fewer fathers than mothers, it is difficult to say whether the information is representative of the sample of all fathers.

Parental socio-economic status

The socio-economic group of each parent was estimated based on their current job or on the last job that they had worked at (*see Appendix 3*).⁴ Similar percentages of mothers occupied the socio-economic groups across intervention and control conditions: Higher Professional (0.6% intervention compared to 1.4% control) and Lower Professional (6.3% intervention compared to 5.4% control) and Non-manual (47.7% intervention and 53.1% control).

4.2 Child sample – baseline characteristics

In the multiply imputed database, there were 331 cases (where outcome variables from all 3 phases were imputed) and the sample consisted of 165 children in the intervention group (n=82 male, n=83 female) and 166 children in the control group (n=95 male, n=71 female). There were more boys (n=177) than girls (n=154) in the sample. The gender balance difference between conditions is not significant. Children (n=280)⁵ had an average birth weight of 3.6 kilos, which did not differ significantly when data were analysed according to group or cohort. Intervention group children were significantly younger than control group children, with an average age of 4 years 5 months compared to 4 years 11 months.

4.2.1 Children with special needs⁶

In intervention services, there were 9 children with a physical need compared to 6 in control services; 86 children with some level of speech and/or language need compared with 10 in control services; and 9 children with a diagnosed or suspected developmental disorder compared to 6 in control services (*see Table 4.2*). The higher level of speech and language need in intervention services is likely to be reflective of higher recognition of the need due to access to the speech and language therapist as part of the programme design. Some children in control services may have had a need that was not identified by parents and Early Years practitioners. The speech and language aspect of the programme will be analysed in further detail in Chapter 5 on 'Process evaluation findings' and a detailed report on this component was conducted in a separate evaluation of the programme (Hayes *et al*, 2012).

Table 4.2: Number of children with special needs, by condition

	Both cohorts		Cohort 1		Cohort 2	
	Intervention	Control	Intervention	Control	Intervention	Control
Physical need	9	3	3	2	6	1
Speech and/or language therapy need	86	10	38	5	48	5
Development need (undiagnosed/ diagnosed)	9	6	3	4	6	2
Total	104	19	44	11	60	8

⁴ Classifications in Tables A3.7 and A3.8 in Appendix 3 correspond to those used by the Central Statistics Office (CSO) in the Census of the Population of Ireland, 2006.

⁵ These data were obtained from parent interviews, reflecting the lower number of children.

⁶ 3 children are listed multiple times for multiple needs/co-morbidity. Data for this table came from baseline parent interviews.

4.3 Child cognitive and language development findings

There were no differences between groups on British Ability Scales (BAS) baseline scores, indicating that because groups were well-matched, randomisation was likely to have been successful (*see Table 4.3*). End-phase results indicate that children from both conditions performed at or just below average (t -score=50) for their age on BAS subscales. On the Picture Similarities subscale, children across both conditions scored at the average for their age, while on all other subscales they performed below average, but this was not significantly as had been the case with the baseline data.

Table 4.3: Mean baseline, mid-phase and end-phase cognitive and language scores, by condition

	Intervention			Control		
	Baseline	Mid-phase	End phase	Baseline	Mid-phase	End phase
Block Building	34.09	35.04	37.73	33.14	37.82	37.51
Verbal Comprehension	35.18	39.12	42.05	34.36	37.74	41.76
Naming Vocabulary	40.52	45.76	47.06	41.69	45.74	46.74
Picture Similarities	43.85	46.87	50.52	44.20	47.16	50.91
Early Number	39.21	44.08	44.68	40.59	42.67	45.65
Rhyme	<i>n/a</i>	<i>n/a</i>	3.45	<i>n/a</i>	<i>n/a</i>	4.62
Alliteration	<i>n/a</i>	<i>n/a</i>	3.37	<i>n/a</i>	<i>n/a</i>	4.07
Lower case letter	<i>n/a</i>	<i>n/a</i>	5.65	<i>n/a</i>	<i>n/a</i>	12.02

Key: Range t -scores 20-80, where 50 = mean score; Rhyme 0-10; Alliteration 0-10; Lower case letter 0-26.

n/a = not available

4.4 Child social development findings (rated by Early Years practitioners/parents)

There were no between-group differences at baseline or end phase on social outcome scores as rated by Early Years practitioners (*see Table 4.4*). Similarly, there were no between-group differences at the end phase stage. At end phase, 85% of the intervention group children were classified as Normal on the SDQ Hyperactivity subscale, compared with 78.45% in the control group (*see Table 4.5*). More control children than intervention children belonged to the Borderline (7.8% compared to 4.18%) and Abnormal groups (13.44% compared to 10.22%) at end phase. About 10% of British children and adolescents have psychiatric disorders (Meltzer *et al*, 2000), which corresponds to an Abnormal classification on the SDQ (Goodman *et al*, 2000). Keeping this in mind, the intervention group children have a level of abnormal hyperactivity that is on a par with the general population, while the control group is 3.5% higher than the general population.

Table 4.4: Mean baseline, mid-phase and end-phase social outcomes, by condition and caseness

	Intervention			Control		
	Baseline	Mid-phase	End phase	Baseline	Mid-phase	End phase
Condition						
ASBI Prosocial	52.85	54.76	57.64	53.05	57.89	57.56
ASBI Disrupt	10.04	10.39	9.91	10.08	9.75	10.42
SDQ Hyperactivity	3.91	3.93	2.85	4.33	3.62	3.46
Caseness	%	%	%	%	%	%
SDQ H Normal	74.00	70.00	85.00	66.74	77.00	78.45
SDQ H Borderline	6.54	7.80	18	7.10	3.40	7.80
SDQ H Abnormal	19.39	22.19	10.82	26.10	19.20	13.44

Key: Range ASBI Prosocial 13-69; ASBI Disrupt 9-21; SDQ Hyperactivity 0-5 = Normal, 6 = Borderline, 7-10 = Abnormal.

Table 4.5: Mean parent-rated baseline and end-phase SDQ scores, by condition

	Baseline		End phase	
	Intervention	Control	Intervention	Control
SDQ Hyperactivity (0-10)	4.05*	3.86	3.44	4.08
SDQ Peer Problems (0-10)	1.78	1.98	1.69	1.83
SDQ Conduct (0-10)	2.83	3.26	2.59	3.21
SDQ Emotional Problems (0-10)	2.45	2.49	2.69	2.44
SDQ Total Difficulties (0-40)	11.17	11.75	10.70	11.72
SDQ Prosocial (0-10)	8.55	8.65	8.38	8.37

* Variable could not be imputed

There were no significant differences between conditions on any of the baseline or end-phase parent-rated Strengths and Difficulties Questionnaire subscale scores (see Table 4.6). However, at end phase, with the exception of the emotional symptoms subscale, fewer intervention group children than control group children were classified as abnormal on SDQ subscale scores. Moreover, on all but the emotional symptoms subscale, more intervention group children were classified as normal. While these differences were not significant overall, they did indicate a trend towards more positive behaviour classifications for the intervention group children at the end of the intervention.

Table 4.6: Mean parent-rated baseline and end-phase SDQ caseness, by condition

		Baseline			End phase		
		Normal %	Borderline %	Abnormal %	Normal %	Borderline %	Abnormal %
Hyperactivity	Intervention	70.9	15.3	13.7	77.4	13.9	8.8
	Control	71.8	14.2	13.9	70.3	11.0	18.7
Emotional	Intervention	70.9	15.3	13.7	70.1	10.9	18.9
	Control	71.8	14.2	13.9	74.1	12.3	13.6
Conduct	Intervention	52.8	14.7	32.4	55.6	14.8	29.2
	Control	43.6	13.1	43.3	43.6	16.5	40.1
Peer problems	Intervention	71.8	9.1	19.1	71.6	14.1	14.2
	Control	67.1	16.6	16.2	71.1	11.3	17.5
Prosocial	Intervention	94.6	2.5	2.8	73.3	10.6	16.1
	Control	97.6	0.8	1.5	67.2	12.3	20.4
Total difference	Intervention	62.9	16.9	20.1	73.3	10.6	16.1
	Control	68.2	13.4	18.3	67.2	12.3	20.3

There was agreement between intervention parents and intervention Early Years practitioners on child hyperactivity at end phase (parents classed 8.8% of children as abnormal for hyperactivity, while practitioners classed 10.8% as abnormal on the same construct). This marked a reduction over time in children being classed as abnormal for hyperactivity by both parents and practitioners (5% reduction for the parent-rated scale and 9% reduction for the practitioner-rated scale). Both of these figures were lower than the 18% of control children rated as abnormal by their parents at end phase, which, conversely, marked a 5% increase from the baseline stage. Moreover, on all but the emotional symptoms subscale, intervention group children were classified as normal more frequently than those in the control group by both practitioners and parents.

4.5 Home-learning environment, parental stress and SDQ finding

There were no differences between conditions on the baseline Parent Stress Scale, the Home Learning Environment Index items or the overall score at baseline, indicating that because the groups were well-matched, randomisation was successful in this regard (all $p > 0.05$) (see Table 4.7). Similarly, there were no between-condition differences in end-phase parental stress or home-learning environment scores.

Table 4.7: Mean baseline and end-phase home-learning environment and parents' stress scores, by condition

	Baseline		End phase	
	Intervention	Control	Intervention	Control
Frequency of library visits	0.63	0.65	1.20	1.15
Frequency of child being read to*	3.03	3.06	3.10	3.30
Frequency child plays with letters per week	3.15	2.78	3.67	3.18
Frequency child plays with numbers per week	3.29	2.70	3.81	4.01
Frequency child paints and draws	4.30	3.98	4.04	3.96
Frequency parent teaches child letters	3.24	3.37	3.69	3.55
Frequency parent teaches child numbers	4.16	4.31	3.81	4.01
Frequency parent teaches child songs, rhymes, poems*	4.36	3.91	3.08	3.61
Home Learning Index (adapted) Total score (Range 0-51)	25.74	25.09	25.73	25.43
Parent Stress Scale	35.08	34.03	36.05	35.54

* Variable could not be imputed

4.6 Findings on Early Years service environmental quality

Mean ECERS-E and ECERS-R and Caregiver Interaction Scale scores at baseline, mid-phase and end phase (ECERS-E only) are reported in this section. Scores are presented for the complete dataset by condition. The ECERS-R was administered at baseline and end phase, while the ECERS-E was administered at all three stages of data collection. The ECERS-R examined structural and process elements of Early Years service quality under the 7 subscales detailed in Table 4.8. The ECERS-E examined curricular and planning aspects of Early Years service environmental quality under the categories listed in Table 4.9.

Table 4.8: Mean baseline and end-phase ECERS-R subscale and total scores, by condition

Both cohorts	Intervention		Control		Programme effect*	Direction	Effect size
	Base (SD)	End (SD)	Base (SD)	End (SD)			
Space and furnishings	4.45 (0.8)	4.62 (0.6)	4.40 (0.7)	4.71 (0.3)	–	–	–
Personal care routines	4.10 (0.4)	4.76 (1.1)	4.25 (0.8)	4.10 (1.4)	–	–	–
Language and reasoning	4.75 (0.7)	5.1 (0.6)	4.80 (0.7)	4.18 (1.2)	–	–	–
Activities	4.25 (0.8)	5.59 (0.5)	4.17 (0.76)	4.28 (0.9)	$F(1, 16) = 6.01, p < 0.05$	Intervention > Control	0.52
Interaction	6.56 (0.3)	6.88 (0.2)	6.60 (0.3)	6.80 (0.2)	–	–	–
Programme structure	5.72 (1.3)	6.80 (0.3)	5.64 (1.3)	5.24 (2.1)	–	–	–
Parents and staff	5.88 (0.48)	6.26 (0.7)	5.60 (0.75)	5.28 (1.3)	–	–	–
Total ECERS-R score	5.05 (0.4)	5.61 (0.4)	4.98 (0.4)	4.89 (0.8)	–	–	–

ECERS-E Rating: 1 = Inadequate, 3 = Minimal, 5 = Good, 7 = Excellent

* See Section 4.7.3 for discussion of programme effects.

4.6.1 ECERS-E and CIS

There were no significant differences between conditions on ECERS-E subscale or total scores at baseline, indicating that services were well-matched and that randomisation had succeeded (see Table 4.9). At baseline, most subscales scores were in between a rating of 'inadequate' and 'minimal', with a tendency towards 'minimal' overall. By end phase, however, the end-phase literacy score for the intervention group was in the 'good' range, while for the control group the literacy scores remained closer to 'minimal'.

Table 4.9: Mean baseline and mid-phase ECERS-E and CIS subscale scores, by condition

Both cohorts	Intervention Mean (SD)			Control Mean (SD)			Programme effect*	Direction	Effect size
	Base	Mid	End	Base	Mid	End			
Literacy	3.25 (0.7)	4.17 (0.7)	4.53 (0.8)	3.34 (0.6)	3.96 (0.4)	3.37 (0.9)	–	–	–
Maths	2.19 (0.3)	2.96 (0.7)	2.89 (0.8)	1.85 (0.8)	2.42 (0.8)	2.03 (0.4)	–	–	–
Science	2.08 (0.6)	2.95 (1.1)	2.69 (0.6)	1.78 (0.9)	2.50 (1.1)	1.99 (0.5)	–	–	–
Diversity	2.36 (0.8)	3.28 (0.6)	3.26 (0.7)	1.92 (0.6)	2.86 (1.1)	2.49 (0.9)	$F(1, 16) = 5.29$, $p < 0.05$	Intervention > Control	0.50
ECERS-E	2.64 (0.4)	3.52 (0.4)	3.47 (0.3)	2.54 (0.6)	3.16 (0.5)	2.65 (0.5)	–	–	–
CIS Sensitivity	37.30 (2.1)	39.10 (0.8)	36.10 (3.5)	36.75 (4.8)	36.88 (3.7)	30.88 (7.8)	–	–	–

ECERS-E Rating: 1 = Inadequate, 3 = Minimal, 5 = Good, 7 = Excellent

* See Section 4.7.3 for discussion of programme effects.

4.7 Findings on programme effects

The presence or absence of programme effects is discussed below and some possible explanatory trends in the data are also explored, where relevant.

4.7.1 Effects of the programme on child cognitive, language and social outcomes

As the closely matched end-phase mean scores across groups indicated, there was no statistically significant programme effect on any end-phase BAS **cognitive** and **language** subscale scores, even when demographics (e.g. family background, child age, gender) and pre-test measures were controlled for in a hierarchical linear model. On the Rhyme and Lower Letter Recognition measures, there was a positive effect in favour of the control group, with the positive coefficients indicating a significant increase in scores at end phase. This finding is supported by the means reported in Table 4.10, indicating that control group children performed significantly better than intervention children on these measures.

Table 4.10: HLM coefficients for end-phase cognitive and language child outcome models

Predictors Outcome	Intervention <i>versus</i> Control	Early Years service <i>versus</i> school	Cohort 1 <i>versus</i> Cohort 2
Block Building	1.28	-2.23	9.09**
Verbal Comprehension	0.63	-0.85	2.24
Naming Vocabulary	-0.19	0.13	2.25*
Picture Similarities	1.03	-1.59	1.45
Early Number	-0.34	1.22	1.91
Rhyme	0.85*	0.67	0.67**
Alliteration	0.10	1.10**	0.53
Lower case letter	3.47*	5.17**	1.41

* $p < 0.05$ ** $p < 0.01$

Additional exploratory analysis on programme effects involved excluding two control services that had reported implementing principles of HighScope, to determine if the similarities between those services and the intervention services were masking a programme effect. However, even with those centres excluded from the analysis, the lack of a programme effect persisted on the outcome variables listed in Table 4.10. In addition, one intervention centre was excluded from analysis of programme effects as it had consistently lower scores at end phase than other intervention centres. The data for this setting were excluded from an exploratory analysis in order to determine if that setting was masking a programme effect by deflating the intervention average scores and, again, this did not result in the detection of a programme effect on outcome variables.

Similarly, on both the teacher-completed (ASBI Disrupt, Prosocial and SDQ Hyperactivity scale) and parent-completed **child social outcome scores**, (SDQ, all subscales), there was no statistically significant programme effect as a result of nested modelling, which also controlled for child and family demographics and baseline scores.

Some explanatory trends in the child cognitive and language data

Children who left Early Years services and were assessed in school

Some children left their Early Years service after one year (particularly in the control condition), therefore, for some of these children, their end-phase assessment took place after they had completed one year of primary school. In the case of the Alliteration and Lower Letter Recognition scores, outcome models indicated a significant increase in the outcome scores in favour of those who were assessed in school. This could also have driven the better Rhyme scores in the control group since more control group children were assessed in school and rhyme recognition is linked with reading activity, which is more of a school-based activity than an Early Years service-based activity. The finding of a school *versus* Early Years service effect for Letter Recognition reflects the task-focused nature of the primary school curriculum, where alphabet skills are a key feature of daily teaching. Exploratory analysis indicated that end-phase Letter Recognition tended to be higher across services (intervention or control) that did not adopt a HighScope approach, which may reflect that these services operated a more didactic and adult-centred teaching strategy which focused on alphabet learning rather than being child-led as is common in HighScope programmes.

Cohort

The cohort indicator (i.e. whether participants were assessed in Cohort 1 or Cohort 2) was found to make a significant contribution to determining outcome scores in the case of Block Building, Naming Vocabulary and Rhyme for the whole sample. There were significantly better scores on these outcomes in Cohort 2 compared to Cohort 1 for the whole sample. No significant differences ($p > 0.05$) on these variables were found between cohorts at baseline. However, there were significant differences at end phase on the Block Building, Naming Vocabulary and Rhyme outcome measures. Within-condition analysis of between-cohort scores indicates that, in the intervention group, Cohort 2 Block Building [$t(101) = -4.79, p < 0.001$], Naming Vocabulary t -scores [$t(124) = -2.39, p < 0.001$] and Rhyme [$t(133) = -3.23, p < 0.01$] were significantly better than in Cohort 1. This was also the case within the control group on the Block Building end phase t -score [$t(41) = -5.22, p < 0.00$], but not for any of the other variables listed above. However, further tests indicated that the higher scores on those variables for Cohort 2 cannot be statistically explained by the presence of a programme effect, i.e. a statistically significant interaction between programme and cohort. It might, however, suggest a trend towards a bedding-in effect of the programme, in that Cohort 2 practitioners may have implemented a more fine-tuned and successful programme because of the lessons learned, and changes to programme implementation made, on the basis of the experience of Cohort 1 practitioners. In turn, Cohort 2 intervention children may have received a programme that more closely adhered to the manual and this could be reflected in their tendency to have higher scores on some outcomes than their counterparts in Cohort 1. Please see Chapter 5 for some additional qualitative process findings that add support to this trend.

4.7.2 Programme effects on home-learning environment

There was no programme effect on the home-learning environment. However, a HLM model of the end-phase HLE index total score indicated that when parental demographic characteristics and baseline scores were taken into account, the number of parenting course sessions ($B=0.39, p < 0.05$) attended made a significant contribution to predicting home-learning environment in the whole sample. Since attendance at a parenting course, and thus frequency of attending parenting course sessions, was highly intercorrelated with being an intervention group parent (73 intervention cases compared to 29 control), this provides strong (albeit indirect) support for the presence of a programme effect in relation to improved home-learning environment. In particular, this finding isolates the Parents Plus Community Course as being a key component in improving the home-learning environment, even two years after the course was attended.

4.7.3 Programme effects on Early Years service environment quality

ECERS-R

There was a programme effect on the Activities subscale [$F(1, 16) = 6.01, p < 0.05$], which meant that the intervention group scored significantly higher than the control group at end phase in terms of the type and range of activities offered to children. Follow-up t -tests indicated that the ECERS-R Activities subscale scores were significantly higher at end phase for the intervention group [$t(15)=2.91, p < 0.01$], with a mean difference of 1.31 between conditions. Further analysis indicated that intervention practitioners engaged children significantly more often in music/movement, nature/science and mathematics activities than their control setting counterparts did (all $p < 0.05$).

ECERS-E

There was a programme effect on the ECERS-E total score [$F(1, 16) = 5.29, p < 0.05$]. The intervention group scored higher than the control group at both the mid-phase and end-phase stages of assessment. Follow-up t -tests indicated that the ECERS-E total score was significantly higher at the end-phase stage for the intervention group [$t(16)=3.67, p < 0.01$], with a mean difference of 1.88 between conditions. This is an indication that the intervention resulted in significantly better curricular and planning quality as a result of the training received by Early Years practitioners, which was supported by key aspects of the programme design (i.e. 37-hour working week and better practitioner:child ratios that allowed planning and review time).

Trends in the Early Years service environment quality data

ECERS-E

The intervention group showed a different trend to the control group in the overall ECERS-E score over time. Contrasts indicated that this difference occurred when comparing scores from baseline to end phase, [$F(1, 16) = 8.54, p < 0.01$]. In the intervention group, the Wilcoxon-signed rank test indicated that there was a significant improvement in scores from baseline [$z = -2.87, p < 0.01$] to end phase, whereas in the control group there was only a slight and insignificant improvement across the same time period [$z = -4.20, p > 0.05$]. This adds indirect support to the programme model in improving curricular and planning quality.

The intervention group also showed a different trend in the quality of the literacy environment than the control group [$F(2, 32) = 7.17, p < 0.01$]. In the intervention group, there was a significant improvement in scores from baseline [$z = -2.59, p < 0.01$] to end phase, whereas in the control group there was no change in scores across the same time period [$z = -.28, p > 0.05$]. There was no main effect for condition, however, indicating that the groups did not significantly differ overall on this variable, although the trend provides evidence for the suggestion that the programme positively impacts on the quality of the literacy environment.

Caregiver Interaction Scale

The majority of Caregiver Interaction Scale (CIS) subscales and the overall Caregiver Interaction Scale score had low internal reliability, with all Cronbach's alphas considerably below 0.70. The exception to this was the Sensitivity subscale, Cronbach's $\alpha = 0.65$, which was deemed to be sufficiently close to 0.70 to report. There was an interaction effect between condition and time of testing that approached significance, however [$F(1, 16) = 4.06, p = 0.06$]. This interaction was due to changes from baseline to end phase. In the control group, the Wilcoxon-signed rank test indicated that there was a significant worsening in scores from baseline [$z = -2.25, p < 0.05$] to end phase, whereas in the intervention group there was no significant change in scores across the same time period [$z = -0.84, p > 0.05$]. This implies that the intervention group Early Years practitioners maintained similar levels of sensitivity throughout the evaluation, while control group Early Years practitioners actually had a drop in sensitivity over the same time period.

4.8 Discussion of child cognitive and language development findings

The significant improvements for the whole sample in BAS *t*-scores subscales over time indicate that, even when age was controlled for, attending an Early Years service may have resulted in cognitive and language improvements. This meant that, for the whole sample, children who were significantly below average at baseline were merely below or at the average for their age by end phase. Research has found that attendance at Early Years services *versus* none results in enhanced developmental outcomes (Evangelou and Sylva, 2007; Sammons *et al*, 2003). If the research design had included a non-Early Years service sample (i.e. children who stayed at home), it would be possible to be definitive about this finding in this sample. Compared to two British studies (the Effective Provision of Preschool Education [EPPE] study by Sammons *et al*, 2002, and the Parent Early Education Programme [PEEP] evaluation by Evangelou and Sylva, 2007), the children in both the intervention and control groups performed worse than the children in the other two studies on the Block Building, Verbal Comprehension and Naming Vocabulary subscales. The Picture Similarity subscale scores were broadly similar across the studies, however. While children in the EPPE study were drawn from a wide variety of social backgrounds, children in the PEEP study were drawn from families living in a disadvantaged area of Oxford, which would be relatively closely matched to Dublin's Tallaght West. Children in the PEEP study and EPPE study were also assessed at 3 years of age, which is similar to the age at which intervention and control children were assessed in this CDI *Early Years Programme* study, although some intervention and control children would have been aged below 3 at time of testing.

Although no significant programme effects have been produced for cognitive variables, there are a number of possible explanations for this. Given that results indicate that intervention children performed at the same level as control children at the end of the 2 years, it might be argued that the programme design did not allow for a long enough timespan to demonstrate possible improvements in cognitive and language scores in the intervention group. It may be that the effects of the programme on these skills may become evident in the longer term only and possibly as a result of the mediating influence of improvements in social skills, which are indicated by the reduced proportion of intervention

children being classified as 'abnormal' on the Strengths and Difficulties Questionnaire at end phase. Researchers have argued that improvements in early social skills are perhaps more important than in any other area because this influences later cognitive and language development outcomes through enhanced executive functioning (Barkley, 2001; Bodrova and Leong, 2007) or better learning dispositions (McKey *et al*, 1995; Sammons *et al*, 2003). It is important that children have a certain level of social competence when they start school (Ladd, 1999; McLellan and Katz, 2001; Parker and Asher, 1987) in order to provide opportunities for increased cognitive, language and social development (Hartup, 1989). Indeed, children with social or behavioural difficulties have been found to have lower levels of cognitive development (Newcomb *et al*, 1993).

4.9 Discussion of child social development findings

The Express and Comply mid-phase subscale scores of children in both conditions are similar to those obtained in a study by Greenfield *et al* (2004) of children ($n=191$) attending Head-Start pre-schools in the USA. Compared to a sample of vulnerable children in a Scottish study by Woolfson and King (2008), children in both conditions had lower levels of expressive, complicit and pro-social behaviour (higher scores indicate more positive behaviour) and lower levels of disruptive behaviour as rated on the ASBI. A possible explanation for this difference is that the children in the Scottish study were younger (all aged below 3 years) than the children in the current research and the differences in scores may be age-related. Mean scores of children in both intervention and control conditions on the SDQ Hyperactivity, Conduct and Emotional Symptoms subscales were lower than those achieved in two intervention studies that assessed SDQ subscale scores of children attending Early Years services (Griffin *et al*, 2010; Sharry *et al*, 2005). Pro-social subscale scores and peer problem scores were higher in both intervention and control children than in children in the other two studies. While this gives an insight into how the children in this study compare to their peers in Ireland, children that participated in the research of Griffin *et al* (2010) and Sharry *et al* (2005) were deemed to have prior conduct or behavioural problems, and so the figures must be interpreted with this in mind. Scores on the SDQ subscales in both intervention and control conditions were found to be broadly similar to those achieved by pre-school children in a study evaluating the *Incredible Years* Programme (Kelleher and McGilloway, 2006).

There was a trend for the children in the control group to show more significant gains from baseline to mid-phase on the positive subscales of the Adaptive Social Behaviour Inventory in the control group. However, this trend was not replicated in the end-phase data and there was no difference between conditions at end phase on the ASBI Prosocial (Express plus Comply) subscale or Disrupt subscales, even when child age was taken into account. However, at end phase, 85% of the intervention group children were classified as 'normal' on the teacher-rated SDQ Hyperactivity subscale, compared with 78.5% in the control group. In addition, more control children than intervention children belonged to the borderline and abnormal hyperactive groups at end phase. Intervention group children had a level of abnormal hyperactivity (as rated by Early Years practitioners/school staff) that was on a par with the general population, while the control group had 3.5% more abnormal cases than in the general population. There was agreement between intervention parents and intervention Early Years practitioners on child hyperactivity at end phase (parents classed 8.8% of children as abnormal for hyperactivity, while practitioners classed 10.8% as abnormal on the same construct). This marked a reduction over time in children being classed as 'abnormal' for hyperactivity by both parents and practitioners (5% reduction for the parent-rated scale and 9% reduction for the practitioner-rated scale). Both of these figures were lower than the 18% of control children rated as abnormal by their parents at end phase, which, conversely marked a 5% increase from the baseline stage. Moreover, on all but the Emotional Symptoms subscale, intervention group children were classified as 'normal' more frequently than those in the control group. It is likely that these findings, although statistically non-significant, are mediated by intervention practitioner training in Conflict Resolution, a 6-step approach intrinsic to HighScope which encourages children to solve their own disputes and find solutions together. As indicated in the 'Process evaluation findings' in Chapter 5, Early Years practitioners had reported that this approach had revolutionised their practice and changed the atmosphere for the children in a positive way.

4.10 Discussion of home-learning environment findings

While the lack of a significant difference between conditions on Home Learning Environment Index items and overall score indicates no programme effect, there is some level of support for an intervention effect on the Home Learning Environment end-phase score. The finding that the home-learning environment increased significantly as parents attended more sessions of the parenting programme provided some strong (albeit indirect) support for a programme effect, if it is considered that those who did not attend the programme received a score of zero and that this was more likely to be the case in the control group than in the intervention group (73 cases compared to 29). Moreover, it is a finding that suggests that it is plausible that the changes in parenting behaviour in the home will lead to direct gains for children in the future, given that the scale concerns itself with constructs such as reading with children, promoting children's number skills and creating a rich literacy environment for the child. Indeed, research has indicated that the home-learning environment of Early Years-aged children predicted age 5 and age 7 literacy and numeracy, even when child and family demographics were taken into account (Melhuish *et al*, 2008) and predicted social and behavioural outcomes at age 11 (Melhuish *et al*, 2010). This implies that the home-learning environment can overcome other disadvantages such as social class or poverty, and it may be that the indirect programme effect on the home-learning environment is a 'sleeper' effect, which will result in gains as the children move into and through the school system.

4.11 Discussion of Early Years service environment quality findings

While baseline scores on the ECERS-R received a label of 'good' quality, this was not the case for either condition on the ECERS-E, which received a label of 'adequate' quality only. Indeed, the mean ECERS-R total scores obtained by the intervention and control groups were higher than those obtained in a large-scale British study ($n=141$) (Sylva *et al*, 2006) and an American study that had a sample of community-based Early Years services ($n=17$) (Burchinal *et al*, 2000). To a certain extent, the ECERS-E baseline and mid-phase scores are a reflection of the lack of a formal Early Childhood Care and Education curriculum in an Irish context given that the ECERS-E focuses on literacy, mathematics and science-related practice and resources. While the ECERS-E total scores were similar to the overall score obtained in Sylva *et al* (2006), there was more diversity in scores in the Sylva sample, with some services achieving a label of 'good' as opposed to 'adequate' quality, which was not the case for this sample. The significant programme effect on the ECERS-E total score indicates that the intervention group had significantly better Early Years curricular quality, while the interaction effect between condition and time of testing indicates that scores improved significantly from baseline to end phase in the intervention group only. Combined, these findings suggest that the CDI *Early Years Programme* results in an overall higher quality Early Years curriculum and that this quality was developed over a 2-year timeframe, where the first year might be considered to be a bedding-in period.

ECERS-R Activities subscale scores were significantly higher at the end-phase stage for the intervention group. A more detailed analysis at the item level of the Activities subscale at end phase indicated that intervention group services were engaging significantly more often in music/movement, nature/science and mathematics activities than control services were (all $p < 0.01$). This provides support for the effect of the HighScope curriculum, which explicitly draws attention to key developmental indicators within categories such as Music, Classification, Seriation and Time. Moreover, as adults must engage in daily and weekly planning as part of the HighScope curriculum, it is likely that intervention Early Years practitioners planned a more varied array of activities than in centres where there was no similar planning requirement/time in place. Research has shown that practitioner planning for individual children (Flynn, 2007; Smyth, 2006) and having the opportunity for regular reflection and review is indicative of high-quality Early Years service practice (Frede, 1995; Siraj-Blatchford, 2004; Siraj-Blatchford and Sylva, 2004). It is suggested that the working structure for intervention practitioners mediated the increase in activities scores given that they worked a 37-hour week, which allowed them to put their new-found experience and training on the HighScope curriculum into place.

Research suggests that training alone is not sufficient to increase environmental quality and to improve child outcomes; rather, practitioners must be afforded the opportunity to interact extensively with children (which points to the importance of low adult:child ratios) and they must have the opportunity to plan a mix of practitioner-initiated group work and child-initiated work (Siraj-Blatchford, 2004; Siraj-Blatchford and Sylva, 2004). As the intervention programme provided lower ratios, practitioner training and the opportunity for practitioners to plan a mix of practitioner-initiated and child-initiated work in large, small and individual groupings, it is extremely likely that these features of the programme resulted in the programme effect on the type and range of activities that intervention practitioners planned and practised with children.

The statistically significant interaction effect between condition and time of testing on the Literacy Quality subscale indicates that literacy quality scores improved significantly in the intervention group from baseline to end phase, and did not improve significantly in the control group across the same period. Letts and Hall (2003) found that over 70% of Early Years service staff in a UK study had not received any initial training on speech and language difficulties. Similarly, Mroz (2006) found that most Early Years service practitioners wanted more speech and language training. Research has shown that training Early Years practitioners on speech and language issues improves children's language development (Ahsam *et al*, 2006; McIntosh *et al*, 2007), with the improvement being mediated by increased staff awareness and attention to children's speech and language.

This significant improvement in literacy quality scores in the intervention group can be explained by aspects of programme implementation targeted at children's literacy, including speech and language therapy training for Early Years practitioners and the use of HighScope key developmental experiences in language and literacy. Indeed, feedback provided by intervention practitioners in focus groups indicated that they felt more confident about delivering aspects of the programme, including the literacy and speech and language aspects, by the beginning of the second year of programme implementation and this perhaps explains why such improvements were not picked up in the mid-phase quality assessments, but were in the end-phase assessments. The use of observation and individualised key developmental indicators as part of the HighScope programme links in to the ECERS-E item on planning for individual learning needs and any effects of the training from the speech and language therapist were picked up on the Literacy subscale.

Chapter 5: Process Evaluation Findings



**Early
Childhood
Care and
Education**

The information reported in this chapter is discussed under the domains of utilisation, fidelity and organisation. These headings were agreed in order to support the integration of findings into CDI's overall process evaluation. Information reported here pertains to programme implementation from September 2008 to August 2011.

The process evaluation involved consultation with parents, Early Years services and CDI staff, in addition to a review of programme implementation documentation, such as minutes, progress reports and manuals, to provide information additional to the quantitative findings outlined in Chapter 4.

Process research questions are outlined below according to the categories of utilisation, fidelity and organisation. Information is presented in response to these questions that highlights key positive and negative aspects of the process of programme implementation.

Utilisation

1. Did the target group utilise the programme and to what extent was this the case?
(Data source: Parents, Early Years practitioners, minutes of meetings, attendance records, progress reports)
2. What was the experience of Early Years practitioners with regard to the programme utilisation?
(Data source: Early Years practitioner focus groups, parent interviews)

Fidelity

1. Was there a match between manual content and programme implementation? If so, in what way?
If not, in what way?
(Data source: CDI staff interviews and Early Years practitioner focus groups, minutes of meetings, progress reports)
2. What was the experience of CDI staff and Early Years practitioners with regard to fidelity?
(Data source: CDI staff interviews and Early Years practitioners focus groups)
3. What was well implemented and why?
(Data source: CDI staff interviews and Early Years practitioner focus groups, minutes of meetings, progress reports)
4. What supports were put in place to ensure manual fidelity?
(Data source: CDI staff interviews and Early Years practitioner focus groups)

Organisation

1. Did the organisational structure of the programme support the fidelity and implementation of the programme? If so, in what way? If not, in what way?
(Data source: CDI manual, CDI staff, Early Years practitioners, minutes of meetings, progress reports)
2. What was the experience of CDI staff and Early Years practitioners with regard to the organisational structure of the programme?
(Data source: CDI staff interviews and Early Years practitioner focus groups)

5.1 Utilisation of *Early Years Programme* by target groups

5.1.1 *Early Years Programme* utilisation by children

Child attendance at intervention *Early Years* services varied greatly, with a minimum attendance of 71 days in one service and a maximum attendance of 153 days in another (*see Table 5.1*). Unless otherwise explained, variation is due to child and family factors such as illness or routine absenteeism. Attendance was collated for each year of programme implementation, which allowed for a maximum of 154 days per year. In the control group for Year 1, there was no great difference in mean attendance as compared to the intervention group. However, control services tended to have lower minimum attendance rates than intervention services. This implies that intervention services may have been better at encouraging attendance for children prone to lower attendance than control services, given that in all intervention services (and regardless of whether a service opened later in the term), minimum attendance did not drop below a figure of 63 days. Conversely, in the control service, the lowest recorded minimum attendance was 36 days.

Table 5.1: Child attendance at intervention and control services from September 2008 to May 2011

	Intervention						Control*			
	Year 1			Year 2			Year 1			
Days	Min.	Max.	Mean	Min.	Max.	Mean	Days	Min.	Max.	Mean
Cohort 1							Cohort 1			
A	109	147	147	90	152	140	K	90	117	97
B	63	125	124	71	136	103	L	53	148	124
C	90	147	144	89	150	115	M	53	150	120
D**	71	101	98	–	–	–	N	57	154	105
E	53	127	124	85	124	101	O	–	–	–
Cohort 2							Cohort 2			
F***	70	120	110	83	147	131	P	86	176	147
G	107	143	125	114	150	134	Q	36	169	118
H	88	144	123	92	153	120	R	79	177	142
I	77	120	85	107	144	130	–	–	–	–
J	92	146	132	108	144	130	–	–	–	–

* Year 1 attendance only available for 7 out of 8 control settings.

** Up-to-date attendance not available.

*** Centre opened late, therefore maximum attendance is lower.

Parents' perspectives on utilisation

Parents in both intervention and control groups reported, in the main, that they felt satisfied with their child's Early Years service, that it met their needs and the needs of their child, that they would recommend the Early Years service to a friend or relative, and that it prepared their children for school. However, a marked difference was noted between intervention and control parents in terms of the extra help that they received as a result of their child attending an Early Years service. Of the intervention parents interviewed (n=137), 50.2% reported getting some form of 'extra help' for themselves or their child as a result of their child attending the Early Years service, compared with just 25.5% of all control parents (n= 94) spoken to at the same point in time. In the intervention condition, this support mainly took the form of access to the CDI speech and language therapist (n= 28), a visit or referral/visit to a psychologist for the child (n= 7), a referral to play therapy for the child (n= 2), access to dental support (n=5) or help with accessing counselling or personal support for the parent (n=12). In the control group, parents reported that the extra help took the form of a referral to speech and language therapy (n= 10), but only two of these children had actually seen the therapist since then; the remaining help consisted of single instances of medical advice, advice on child sight and hearing problems, as well as three referrals to a psychologist. The greater incidence of extra help provided to parents and children in intervention Early Years services is linked to the programme design and ethos, and reflects that the programme was well-tuned to the needs of the community it served.

5.1.2 Speech and Language Therapy utilisation

Altogether, 192 children were referred to the CDI Speech and Language Therapy Service. Most of the children referred (between 54.6% and 60%) had not previously been referred to other speech and language therapy services. Significantly more boys (n=120, 62.5%) were referred than girls (n=72, 37.5%). In total, 87% of boys (n=104) and 73.6% of girls (n=53) were accepted for therapy. 13 boys (12.5% of boys accepted) and 15 girls (28.3% of girls accepted) were discharged from the CDI Speech and Language Therapy Service with their speech and language within normal limits after therapy. 50% of children (n=78) transitioned from the service (i.e. no longer attended an eligible setting) with ongoing speech and language needs, and were referred to other speech and language services, primarily the HSE community services. The remainder of children were still in receipt of speech and language therapy at the time of writing. Additional information and a more detailed description of utilisation of the speech and language component can be found in the separate report on the CDI Speech and Language Therapy Service by Hayes *et al* (2012).

Implications of process findings on Speech and Language Therapy utilisation

The number of new referrals, average age and waiting times suggest that without the CDI Speech and Language Therapy Service, children would not yet have received therapy or even been identified as having a need. The provision of a speech and language therapy (SLT) role in the CDI programme allowed increased, quicker and easier access for children and parents to a speech and language therapist on the site of the children's Early Years services. This indicates that if a service such as speech and language therapy is offered in a child- and family-centred way at an early stage, children and families will avail of the service. The lower incidence of speech and language therapy need and referral in control services indicates that services that do not engage directly with a speech and language therapist for training and intervention purposes are less likely to identify and refer children for speech and language needs. By training Early Years practitioners and offering an SLT service to Early Years children, children can be identified and treated at an earlier age than would be the case if they had to wait to visit a clinic-based therapist. In turn, this will help them to be ready to learn once in school and will have positive implications for their general social development and later life outcomes.

5.1.3 Parent component utilisation

In Cohort 1, 63 parents completed the Parents Plus Community Course (PPCC) out of a total of 74 who initially enrolled (see Table 5.2). In Cohort 2, 50 parents out of 67 completed the course in Year 1. The average number of home visits over 2 years ranged from 5.8 to 8.1 in Cohort 1 services, indicating that most services, on average, fell below the planned 4 home visits per year (8 visits per 2-year programme) set down in the manual, but some parents chose to meet on site with the parent/carer facilitator (PCF). In Cohort 2, mean home visits ranged from 1.5 to 6.0, with 3 out of 5 settings achieving an average of at least 4 home visits for the first year. PCFs from Cohort 2 reported running the parenting course during the first year of the programme only. Given the level of investment in the training of PCFs and the indicated uptake

in the first year of programme implementation, it might be argued that additional attempts at running the course would have been beneficial for accessing those parents who had not engaged in the first year, notwithstanding the completion rate of 80%. Although PCFs reported engagement issues such as parental full-time employment and lack of interest, it was their role to access hard-to-reach parents through strategies and compromise. Similarly, if the variance in the number of home visits is considered, this reflects a lack of consistency across services in what is an essential component of the manual. These findings relate to component utilisation and design, and should not be taken as a criticism of the development and engagement work undertaken by PCFs. In almost every setting, PCFs echoed what was summed up by one service manager: *'No matter what you do, some parents simply don't want to be involved.'*

This finding should not take from the extensive parental engagement evident in the figures above from parental report, practitioner focus group and programme utilisation, which would not have occurred if the CDI programme was not implemented. Indeed, the quantitative finding that frequency of attendance at a parenting course was related to an improved home-learning environment indicates that the uptake and attendance at the PPCC was sufficient to result in a positive change in parents' practice in creating a rich and varied home-learning environment for their children.

Table 5.2: Parent component utilisation from September 2008 to May 2011

Setting	No. of courses run	No. of parents enrolled*	No. of parents completed	Mean home visits per family	Minimum home visits**	Maximum home visits
Cohort 1						
A	4	11/16	9	6.1	0	12
B	4	14/25	8	5.8	2	22
C	4	29/33	27	6.2	3	8
D	2	7/13	7	6.7	3	14
E	3	13/23	12	8.1	6	8
Total	17	74/110	63	32.9	14	64
Cohort 2						
F	2	18/19	11	1.5	0	2
G	2	15/17	10	1.6	1	3
H	2	18/21	15	4.0	4	5
I	1	1/10	1	6.0	4	8
J	2	15/21	13	4.1	3	4
Total	10	67/88	50	17.2	12	22
Total both cohorts	27	141	113	50.1	26	86

* Out of total possible amount available for enrolment.

** It was not possible to get home visit figures for all settings in Year 2 of Cohort 2 due to non-return of surveys, so figures are presented for Year 1 only.

5.2 Manual fidelity and programme utilisation

Programme implementation proceeded in a manner that was conceptually faithful to the programme manual. In terms of the components that were set down in the manual for programme implementation, Table 5.3 provides a summary of what was implemented.

Table 5.3: Implementation status of *Early Years Programme* components

Component	Implementation status
Supplemented parental contribution	✓
Provision of nutritious snacks	✓
Ratio of 1:5	✓
High/Scope curriculum	✓
Síolta Framework*	✓
Key worker system	✓
Designated Speech and Language Therapist	✓
Psychological/primary health/social services	✓
Parent/carer facilitator	✓
Parents Plus training course	✓
Communities of Practice meetings	✓
Manager's meetings	✓
Progress reports	✓
Home visits	✓
Summer programme	✓

- * This was not implemented in one intervention setting since the setting chose not to engage with the process. Engagement with Síolta was not mandatory, although it was a constituent part of the manual.

5.2.1 HighScope curriculum and training

The HighScope curriculum is a flexible and broad-based curriculum that encourages children's holistic development and learning across a range of competencies (social, emotional, cognitive and language). It was implemented in all Early Years services delivering the CDI *Early Years Programme*. In the first year of programme implementation, all Early Years practitioners received training in the HighScope curriculum concurrent to its delivery; therefore, they had only completely covered the entire curriculum by the end of the first year of programme implementation. In the second year of programme delivery, practitioners were no longer being trained in HighScope and were therefore fully trained while implementing the programme. As a result of feedback from Cohort 1 practitioners, changes were made to the delivery of HighScope training for Cohort 2 practitioners. In addition to the recruitment of a new trainer, training was delivered over a more intensive training period than had been implemented with Cohort 1 Early Years practitioners. Cohort 2 Early Years practitioners were offered additional training in areas such as the Child Observation Record (COR), which was timed earlier in the training programme than it had been for Cohort 1. Training also took place on Saturdays rather than late into the evening on weekdays, as had been the case for Cohort 1 practitioners.

Early Years practitioners' perspectives on the HighScope curriculum

Early Years practitioners identified HighScope training as the single most significant aspect of the CDI programme and reported that it had, in the main, revolutionised their practice. There was practically unanimous agreement that they could not 'go back' to any other approach once educated in the HighScope approach. Practitioners identified the freedom that the curriculum accorded to children and the inclusion of child interests as being some of its main advantages. One practitioner provided an example: *'They [the children] are ready to ask questions now and they can go with their interests – we don't have to be making them do some Hallowe'en thing just because it's October.'*

Other key facets of the curriculum singled out by Early Years practitioners as being significant were the 'Six Steps to Conflict Resolution', the Child Observation Record (COR) and the Daily Routine. In the main, practitioners reported initially struggling with the implementation of the HighScope's conflict resolution technique, but all reported in the final focus group that they felt confident in the approach and that it worked so well that, by the end of the second year, most children were able to solve problems and conflicts without adult intervention.

A broad difference of opinion among Early Years practitioners in relation to the training experience was noted on the basis of information provided by Cohort 1 and Cohort 2 practitioners who were trained in programme implementation from September 2008 to May 2009 (Cohort 1) and from September 2009 to April 2010 (Cohort 2) respectively. At the end of Year 1, Cohort 2 practitioners reported higher levels of confidence about curriculum implementation than Cohort 1 practitioners. The majority of Cohort 2 practitioners agreed that the trainer had supported their needs both during and after the training, which had emerged as an issue for the majority of Cohort 1 practitioners (source: focus group, trainer interview and CDI personnel interview). Feedback from Cohort 2 Early Years practitioners was overwhelmingly positive about the content and delivery of the HighScope training, which was in contrast to the feedback from Cohort 1 practitioners obtained at the same relative point in time. While practitioners from both cohorts reported feeling confident and assured about delivering HighScope by the second year of implementation, this had not been the case for Cohort 1 practitioners at the end of Year 1.

Implications of the process findings on the HighScope curriculum

There is evidence from Early Years practitioner focus groups, CDI staff interviews, progress reports and minutes of meetings that Early Years practitioners who implemented the HighScope curriculum with Cohort 2 children had a better training experience and were trained sooner than those practitioners in Cohort 1 services. The lower levels of confidence reported by Cohort 1 practitioners after the first year, in particular, indicate that there were learning effects in place for these practitioners, which meant that it took longer for them to become assured in HighScope implementation. In comparison, their Cohort 2 counterparts were more confident in programme implementation at an earlier stage (after the first year), which is likely to be the result of the changes made to the HighScope implementation and training as a result of feedback and learning from the implementation with Cohort 1 practitioners. Moreover, as the entire CDI *Early Years* Programme was at a start-up stage in September 2008 (when Cohort 1 Early Years services began implementing the programme), there was a wider context of learning and familiarisation for all involved, including at the CDI organisational level (source: CDI staff interview), whereby structures, schedules and relationships were still in the process of being established and strengthened.

It is suggested that Cohort 2 Early Years practitioners benefited from receiving training in the second wave of programme implementation, when lessons had been learned from the initial bedding-in period, which took place both at the training level and also at a wider CDI organisational level. These factors may have translated to more effective practice for Cohort 2 practitioners, resulting in better child outcome scores on those variables. This suggests that departures from manual fidelity, or delays to or lack of consistency in programme implementation can have negative effects on outcomes.

5.2.2 Síolta Framework

Síolta is the National Quality Framework for Early Childhood Education in Ireland. Síolta comprises three distinct, but interrelated elements, namely principles, standards and components of quality (and their associated signposts for reflection). The principles provide the overall vision of the framework. The standards, components and signposts for reflection allow for practical application of this vision across all aspects of practice in an Early Years service. Intervention Cohort 1 services were not implementing Síolta for the first year of programme provision, although some services engaged from 2009 onwards. This was due to the fact that a Síolta Coordinator (who was interviewed as part of the process evaluation) only began working with services in 2009 after planning and development work, initiated by CDI, secured a dedicated staff member to work in Tallaght West. It had not been possible to have the working relationship in place in September 2008, despite planning and attempts to do so on the part of CDI. Since 2009, 11 services in Tallaght West engaged with the Síolta Coordinator and undertook to work towards completing all, or some of, the Síolta standards. Three of these services were control services, while 7 were intervention services. All but one of the services involved in the evaluation undertook to implement all 16 Síolta standards. The remaining service was engaged with the Síolta process on a standard-by-standard basis.

Thematic analysis of the progress reports of the Síolta Coordinator indicate that Early Years practitioners from intervention services, in general, were well motivated and committed to the process of completing the standards. However, the issues that the Coordinator identified in early reports persisted in some services, such as a lack of time for mentoring and development work, and a need for increased management support and ownership of the process. Ultimately, there is a trend in the Síolta Coordinator's reports whereby she identifies that Síolta implementation and engagement proceeded well as long as some key features were in place: supportive management who took ownership of the process; enthusiastic and engaged Early Years practitioners; designated planning and documentation time; no practitioner turnover or absenteeism; and good practitioner understanding of the framework and quality in general. In cases where any of these features were lacking, the Coordinator reported difficulties or delays with progress. At the time of writing, 5 Early Years services in Tallaght West were on track to complete and submit the portfolios necessary for the full 16 standards of the Síolta Quality Assurance Programme: three were intervention Cohort 1 services, one was an intervention Cohort 2 service and one was a control Cohort 2 service (a primary school not involved in CDI *Early Years Programme* implementation). This reflected a changed engagement with the process in the case of these 5 services, which were no longer working towards the full 16 standards but rather progressing standard-by-standard as time and resources would allow. These changes were reported to be attributed variously to staff illness and manager absenteeism, lack of managerial ownership of the process, differing levels of practitioner understanding of the concept of quality, and organisational factors such as moving of premises or restraints on planning time.

Early Years practitioners' perspectives on Síolta Framework

Intervention Early Years practitioners were less enthusiastic about the Síolta Framework than they were about the HighScope curriculum (see Section 5.2.1). Since engagement with Síolta involved a considerable amount of portfolio creation and documentation of evidence to back up compliance with the various standards, there was a general consensus among practitioners that the process was time-consuming and administratively heavy. Notwithstanding this, many practitioners felt that the journey of working towards Síolta standards was a worthwhile one. They commented that the framework had offered added insights and learning opportunities for them, which would aid their practice in the long term.

Implications of process findings on Síolta Framework

As Síolta was not exclusively rolled out in CDI Early Years services but was also offered to some control services, and services not previously working directly with CDI, this limits the opportunity for isolating the effects of Síolta as a programme component. However, it should be noted that there was greater adoption of the framework in intervention services, i.e. 4 intervention services and just one control service were on track to completing all 16 standards at the time of writing. While 2 other control services had engaged with the Síolta Coordinator, they had only opted to work towards individual standards, thus limiting the potential impact of the component on their services. It should be noted that the timing of Síolta programme delivery also makes it difficult to isolate any quantitative programme effects since Cohort 1

services only began to adopt it after the first year of programme implementation and continued to work towards all standards after the final evaluation assessment with Cohort 1 services was completed in May 2010. Only 1 out of 5 Cohort 2 intervention services worked on Síolta implementation over the course of two years, which limits the sample size for analysis of programme component effects.

The process findings from the Síolta Coordinator's progress reports and from practitioner feedback indicate that the Síolta component is best implemented in well-resourced services that provide ample opportunities for practitioner planning, record-keeping and documentation. This may also be aided by an engaged and organised Early Years service manager who is already committed to keeping detailed records and up-to-date policies and procedures, so that the act of portfolio compilation is relatively straightforward and does not require capacity-building within services before the Síolta documentation process can begin.

The greater uptake and move towards completion of the Síolta process in intervention services is likely to have been aided by the better practitioner ratios and longer working days in the CDI *Early Years* Programme. Mainstreaming of Síolta should take the current working hours and planning opportunities of individual services into consideration, given that Early Years practitioners in the CDI programme indicated that they found aspects of engagement to be administratively time-consuming, their favourable working structures notwithstanding.

5.2.3 Speech and Language Therapist

A dedicated speech and language therapist (SLT), funded through CDI, was assigned to work with the Early Years practitioners, children and families of the CDI *Early Years* Programme. The SLT was supervised by the HSE Community Speech and Language Therapy Department. The SLT component was a key aspect of programme delivery that marked the creation of a novel working relationship between CDI and the HSE for the delivery of health services in a community- and child-centred way, while employment structures were provided through a local community-based service, An Cosán (Hayes *et al*, 2012). There was also a SLT employed to work with children receiving the *Healthy Schools* Programme in primary schools in Tallaght West (Comiskey *et al*, 2012). Training sessions (*see separate SLT report for more detail*) run by the SLT included sessions for Early Years practitioners on supporting language development for children (including those with English as an additional language) and for parents on supporting speech and language development in the home. Training sessions were also conducted with primary school Junior Infant teachers to support those children who transfer from Early Years services to primary school with a speech and language need.

Implications of process findings on the Speech and Language Therapist

The speech and language therapist role and implications of the role for the *Early Years* Programme is discussed in detail in the separate evaluation of the CDI Speech and Language Therapy Service (Hayes *et al*, 2012).

5.2.4 Parent component

The parent component consisted of the provision of a parent/carer facilitator (PCF) role in every intervention Early Years service, whose job it was to engage with and support parents, in addition to delivering another aspect of the component – the Parents Plus Community Course (PPCC). The PPCC was a 6-week course designed to support parents in building positive relationships with their children and which provided strategies for supporting their children's learning and for dealing with social or behavioural issues in a positive way. Moreover, the programme manual had set down that Early Years practitioners and/or the PCF would bridge the learning gap between the Early Years service and home by undertaking at least 4 home visits per year to the homes of intervention children.

Every Early Years service appointed a PCF and, in addition to undertaking engagement activities, parental support and outreach, the PCFs delivered the PPCC to parents of *Early Years* Programme children (*see Section 5.1 on programme utilisation for more detailed information on the uptake of these programme components*).

Early Years practitioners' perspectives on the parent component

Feedback on the **role of the parent/carer facilitator (PCF)** from focus groups with practitioners was positive. There was general consensus that most parents became more involved with the Early Years services due to the relationship built up with the PCF through the PPCC, home visits and family trips in the summer programme. However, Early Years practitioners reported that not all parents engaged with the parent component (course, home visits, summer programme) for reasons such as work commitments or other constraints.

Practitioners reported that parents had, in general, been initially apprehensive about **home visits** and many practitioners also admitted to initial trepidation about the reception they would receive from parents in the home. Some practitioners found it difficult to sustain 4 home visits per year with certain families. The following comment illustrates the difficulties echoed by practitioners in many services: *'I think though it's very hard ... some parents ... they start off and they're saying "Yeah, that's fine, we're really up for home visits" and they think that they don't need the help and they're out working, and it's really hard to meet with parents that are out working ... So that'd be one thing that we've come up against ... actually getting the parents in, because I think after the first two [home visits], they're like, "Oh yeah, that's it, I've had enough now".'*

Some PCFs tried to ameliorate this problem by holding 'home visits' on the Early Years service site. One PCF described the compromise as *'they might have to take an hour or something like that to come see us ... We try to be around when they're available.'* Another PCF noted that parental engagement was difficult since parents did not always see the need for such supports: *'The parents think they don't need that kind of support ... in relation to home visits ... If I pushed it any further or if I did more than I am doing now at the moment, I would actually be intruding.'*

While meeting with parents on-site was a compromise for those who were not receptive to home visits, it must be remembered that a meeting on-site lacks the characteristics of home visits that extend the learning environment for parents, practitioners and children. Examples of such characteristics would include the child showing the practitioner their room, toys and interests; the parents engaging with the practitioner on familiar territory; the practitioner gaining an understanding of the home-learning environment through observation and being able to make concrete recommendations or apply learning supports based on these observations.

The following point, made by an Early Years practitioner, illustrates the importance of practitioners visiting children and families in the home: *'We couldn't figure out how the parent couldn't see the problem with the child. Then when we went to the home, the home was catering unknowingly to the child – the home was not set up to see what we see and the child was totally different there. We couldn't believe it.'* This incident clearly underlines the added benefit that better links between home and Early Years services have; in this case, the practitioners gained a clearer understanding of the child in their service by witnessing their home environment and were then in a position to interact with the child's parents in a more informed way, based on the knowledge they had gained from the home visit.

When parents were receptive to home visits, however, practitioners found an eventual warm reception, which meant that their initial trepidation had been groundless: *'Now mind you, when we went on our home visits, we got great feedback from the parents and they were actually happy.'*

Early Years practitioners in another service highlighted the power that the home visit component afforded them in changing parental attitudes to visiting professionals and in creating positive parent–professional working relationships: *'I really like the home visits too because from my experience of parents, any time any sort of professional knocks on the door, it always seems to be in a negative capacity, that they are doing something wrong. It's a social worker or a public health nurse. But the parents ... they have just been so welcoming and brilliant about us going into the home and it's given us a broader picture than of the children as well, to see them, what they're like in their home environment.'*

A practitioner from another service commented that home visits and the parent component in general helped them to significantly improve their working relationship with parents: *'The formal time for parental feedback is something that on paper we would have said we did as a service [before the CDI programme]. But I mean, the HighScope training we did ... and the manual really brings that [to the fore] ... [we had] to report exactly what that means and we got great, great feedback and afterwards parents can't understand why it doesn't happen all around, why people wouldn't want that level of involvement because it's about their child, you know.'*

Returning to the role of the **parent/carer facilitator (PCF)**, it was generally well-received by parents and Early Years practitioners alike. Initially, however, some PCFs and Early Years practitioners reported difficulties with identifying the duties of the role and would have liked clearer guidelines from CDI. One PCF recalled people asking them about their role: *'Well, what are you doing?' And I was, like, "Well I'm not too sure, I'm going to go out and visit different things in the community or I'm going to ring different places or ..." ... It was just very hazy, it just wasn't defined ... I think it definitely would be good if CDI looked into defining that role and not just a job description ... it's so general.'* Other PCFs, even a year into programme implementation, echoed this uncertainty about their duties and what they should be doing. One underlined the desire for increased support and information on the role (and other roles) from CDI: *'Maybe they [CDI] should be checking that everyone is implementing it and following the rules on their own. It's just left that – There, you're the Parent/Carer, you're the Educator, you're the Senior Practitioner, off you go. It's not that I expect them to be watching, giving out, but just to make sure that everybody is going with what's written in the manual.'* Another commented: *'Do you know, I'm just going along doing what I think I'm meant to be doing and from the meetings throughout the year with the other Parent/Carer Facilitators. But it might be helpful for there to be [a place/opportunity] simply where somebody could say, "Yeah, you're on the right track".'* As indicated in this last comment, PCFs reported ultimately that they found support informally through liaising with others PCFs on their own initiative and at Communities of Practice meetings.

Other Early Years practitioners reported that they found the PCF role beneficial. One underlined how the role allowed for parents to be supported towards further education and training: *'For example, you might get a parent, they're not working and they're looking for something to do and you can say, "Well, [the PCF] will help you looking for courses or whatever" and you know that [the PCF is] going to be able to set up a meeting with them one-to-one.'*

Parent/carer facilitators' perspectives on the Parents Plus Community Course

Parent/carer facilitators (PCFs) found the Parents Plus Community Course (PPCC) very beneficial for children and parents across the board: *'It's just brilliant. It focuses on the child and helps parents to spend quality time with their children without having to set aside a particular time for play or housework or reading ... It really is brilliant. And the parents that did it, you could see the difference in their children, you could see their confidence building and you could see the children's confidence building.'*

Some highlighted the techniques that the PPCC helped parents to develop with their children: *'Parents were frustrated with reading to their children because their children wouldn't sit and read a book, turning pages, 1, 2, 3, so introducing the concept that the book has a picture and that the picture itself is a story and my co-facilitator said, "Have you ever let him read to you?"'*

The PPCC showed parents how to integrate learning opportunities into everyday tasks: *'So I suppose it opened up the parents to new ideas as to how they could tune into their child, even matching socks, things or allowing them to help if there's potato peeling going on, that they'd have their own little bit to do on the side ... You don't have to set aside a particular time. You can let them have that quality time by just integrating something into your chores or your household or whatever.'*

According to PCFs, an additional benefit of the PPCC for parents was the development of relationships with other parents in their area, people whom they may not have previously known: *'The ones who did it [PPCC] have really come together and you can see how well they know each other. When they come into the Early Years service, they're all chatting and talking to each other and helping each other out with a problem or whatever, and I think it's great. It's united all the parents in the Early Years service.'*

Parents' perspectives on the PPCC

The majority of parents consulted as part of a structured interview reported that the PPCC was extremely beneficial and many wished that they had done it when they first had children. Parents reported that the programme made them, *'stop and think'* before interacting with their child and that they were calmer in their approach to their child. Many reported implementing techniques such as the reward chart to support positive behaviour and said that the course had changed their relationship with their child in a positive way.

Implications of process findings on the parent component

The process findings on the parental component vary according to the strand of the component under consideration. The **Parents Plus Community Course (PPCC)** strand of the parental component was the best implemented element, with parents and practitioners universally positive about its implementation. This is likely to be a function of the rigorous, evidence-based and manualised nature of the course and the support offered by the trainer and author of the programme to PCFs on a regular basis. Given that parents reported implementing techniques from the PPCC and that it changed their approach to and interaction with their child, this provides some explanatory context for the quantitative finding in Chapter 4 that frequency of parental attendance at the PPCC was linked to a better home-learning environment in the whole sample.

Home visits were well-received by parents after an initial period of reticence reported by some practitioners. Many Early Years practitioners reported positive effects of the visits, such as practitioners gaining an understanding of the home-learning environment through observation, which lead to concrete recommendations and strategies for the learning and social development of those children. Given that the frequency of home visits was not linked to any child- or parent-level outcomes, it may be the case that the different approaches, and the range in frequencies of visits reported by Early Years practitioners, may have reduced the possibility of isolating home visits as a component with uniform features and implementation across services.

The process findings in relation to the **role of the parent/carer facilitator (PCF)** are not as strong as the findings in relation to the PPCC. While the PCF role was broadly welcomed and commended by parents, the findings in relation to Early Years practitioner and PCF perspectives were not so unanimous. While virtually all reported that they could see the benefit of the role, both the PCFs themselves and their Early Years practitioner colleagues reported a period of uncertainty about their duties, which underlined a need for clearer definition of the role and greater support around expectations and procedures necessary for the execution of the role. While all PCFs reported that they had come to an understanding of the role, partly due to the support offered by the PCF Communities of Practice meetings, their understanding was also likely to have been largely shaped by their own previous experience and individual characteristics, in the absence of other more rigorous organisational structures or guidelines.

It is a necessity when developing replicable programmes to have clear definition of all roles and components of the programme. The risk and likelihood in the CDI *Early Years Programme* (given the accounts provided by PCFs and managers, as well as from observation at meetings and in services) is that the PCF role developed differently in different services, thus diluting the clear impact of the role and making it difficult to ascribe clear outcomes beyond the qualitative reports of its success. A clear recommendation arising from this process finding is that the creation of novel roles should be very clearly delineated in terms of expectations, work practices and reporting structures. Moreover, it is advisable that a coach/mentor is available to those undertaking novel roles and that the coach/mentor be available for consultation on all aspects of the role on an ongoing basis and particularly in the early stages of programme implementation. It is noteworthy and significant that the aspect of the parent component that was consistently praised by practitioners and parents alike and that was linked to an improved home-learning environment (i.e. the PPCC) was the aspect that was most clearly delineated and that benefited from having a clear manual and an accessible mentor and trainer for follow-up support to those delivering it.

5.3 Organisation

5.3.1 Síolta Coordinator and implications of process findings

As noted above, Cohort 1 services engaged with the Síolta Coordinator one year into programme implementation. From an organisational viewpoint, it would have been preferable if the Síolta Coordinator was engaged at the beginning of the programme delivery for Cohort 1, rather than one year into programme provision, so that Síolta could have been implemented over 2 years in both cohorts. This would also have helped in the isolation of the quantitative effect of the Síolta component since changes in the programme could have been picked up more easily by the evaluation design and data collection schedule.

5.3.2 Speech and Language Therapist and implications of process findings

Benefits of the role of the speech and language therapist (SLT) included the interagency collaboration between CDI and the HSE, which allowed for the SLTs to be employed by a local agency called An Cosán for the purposes of working with CDI intervention children, but supervised by the HSE Community Speech and Language Therapy Department. This novel working structure was welcomed by practitioners and parents alike, who highlighted advantages such as easy exchange of information between Early Years practitioners and SLTs on the Early Years service site and ease of access of SLTs to children, who were visited in their Early Years service by the SLT rather than having to travel to hospitals or clinics. The 4-month delay (due to the recruitment process and notice requirement of the successful candidate) in appointing a new SLT left some children without the service for an extended period. Full details of the SLT role are provided in the separate evaluation report on the CDI Speech and Language Therapy Service (Hayes *et al*, 2012).

5.3.3 Early Years practitioners

The organisational structure of the CDI *Early Years* Programme was somewhat novel in that practitioner:child ratios were 1:5, as compared to the national average of 1:6 or above. Practitioners worked a 37-hour working week, which again was on average 10 hours longer per week than most similar Early Years services across the country. The use of a key worker system meant that Early Years practitioners had designated children to work with at small group time and that they were responsible for observation, record-keeping and developmental reporting on these children, in addition to visiting the children's homes for home visits. The longer working day allowed for daily and weekly planning, for individualised record-keeping and for the preparation of progress reports on children. This allotment of time for paperwork and planning is relatively novel in an Irish Early Years context and reflected an awareness of the importance of incorporating established knowledge on best practice for Early Years practitioners into the CDI *Early Years* Programme.

Early Years practitioners' perspectives on the organisational structure for Early Years practitioners

All CDI Early Years practitioners were positive about the organisational structure of the key worker role. The extra key worker, which allowed for a better adult:child ratio, was commended by Early Years practitioners as a key strength of the CDI *Early Years* Programme staffing structure because it allowed for smaller groups and better adult:child interaction. Early Years practitioners were unanimous that the longer working day allowed them to plan for the following days and weeks, to keep detailed records and compile reports on individual children and their development, as well as going on home visits. Moreover, they noted that this working and planning time was a change to their practice and an element to which, they felt, they were no longer paying lip-service. As one practitioner commented: *'Before [the CDI Early Years Programme], we would have said, and thought, that we planned and kept records and did our observations and reports. But I can see now that we would never have had the time to do it properly with the shorter days ... You need that [planning and paperwork] time to do the best practice you can, every day.'*

Implications of process findings on the organisation of Early Years practitioners

Early Years practitioners were unanimous about the positive role of an extra key worker and a longer working day in improving their practice. The funding of an extra key worker in each CDI Early Years service was not financially possible, however, after the initial 2-year funding period ceased. While it might be argued that the re-distribution and sharing of the knowledge of the CDI trained practitioners will be beneficial for new childcare services, this calls the sustainability of a key element of the programme design into question. Any potential mainstreaming or replication of the programme would need to take the cost-burden of funding an extra qualified practitioner member into account.

5.3.4 Parent/Carer Facilitator role and implications of process findings

As discussed in Section 5.2.4, the role of the parent/carers facilitator (PCF) would have benefited from clearer delineation from the outset, which would most likely have added even more to the positive reception of the role by parents and which would have enabled PCFs and their colleagues to begin work with parents and families immediately, without the need for a bedding-in period. It is likely that those still working in the role and those working in later incarnations of the role (i.e. post-evaluation) will benefit from the groundwork laid initially in the establishment of the role and it is surmised that the benefits noted by parents and by practitioners (towards the later stages of the evaluation) will continue and strengthen over time, perhaps allowing for clearer isolation of the role in its contribution towards child and family outcomes in the future.

5.3.5 CDI staff

The key members of the CDI organisation identified by Early Years practitioners as being their points of contact were CDI's Quality Specialist, the Research and Evaluation Officer, and the Chief Executive Officer. The Quality Specialist was the closest link to CDI for Early Years service managers and practitioners. That staff member's role was to liaise on a regular basis with Early Years services and to support programme implementation through the organisation of Communities of Practice meetings, training events, feedback sessions, site visits and through informal telephone and e-mail contact.

Early Years practitioners' perspectives on CDI

While most Early Years practitioners mentioned having contact with various members of CDI staff over the course of programme implementation, most identified the Quality Specialist as their main point of contact. Overall, practitioners felt satisfied with their relationship with the Quality Specialist, whom they found to be helpful and supportive in the main. However, in a number of services, some practitioners indicated (*source*: end-phase focus groups) that there were many instances when they had brought a question or issue to the Quality Specialist and had received an unclear response. Thematic analysis indicated that, in the main, these questions or issues centred on aspects of manual implementation or fidelity, and practitioners were often told that such decisions/issues could be handled by their own individual management team rather than CDI. This had been picked up as a possible weakness in support for practitioners in the first interim report, but it seems to have persisted across both cohorts until the end of the programme. One Early Years practitioner displayed an awareness of the importance of manual fidelity across participating services: *'I just think it's [the manual] so vague that you could interpret it. I know at the beginning I had to ring [Quality Specialist] umpteen times to say, you know, can we do this, can we do the other? I've worked in research and if it's so vague and it can be open to interpretation in so many ways, it's not going to be the same exact programme in every centre. Even down to like the summer programme, it says a 4-week programme, but then someone says it doesn't say how many hours – is it the same as the rest of the year? There's nothing in it that specific.'*

Early Years practitioners reported that they felt that the manual was being interpreted differently by different services and that the response of the CDI Quality Specialist to queries about the manual did not always help to clarify matters: *'I would've asked her [Quality Specialist] questions at the time and she gave me her answer. But I didn't feel that that was maybe everybody's point of view ... that's not to do with her. But if you asked [Quality and Services Officer] or anyone, you get what they interpret it to be because it's just interpretable, it's not sort of fact. It's vague.'*

Early Years practitioners suggested that manual fidelity could have been helped by more clear-cut guidelines on manual components and roles: *'I wonder about maybe having a tick chart for the different workers in it ... these are the things that are expected by the end of 2 years, am I putting them in place, am I doing it right with them, or a weekly timetable.'*

In focus groups, practitioners discussed components of the manual that differed across services. These included the number of children that worked with a practitioner in key groups: practitioners reported that this ranged from 7 to 4 according to services. Moreover, services had different daily routines, which although broadly faithful to the HighScope curriculum, nonetheless differed between services. Some Early Year practitioners and service managers had additional paperwork and reporting requirements over and above programme requirements that were related to their umbrella organisation, which impacted on the amount of time that was available for record-keeping and planning. Moreover, gaps

in speech and language therapy provision affected some services more than others, according to differing Early Years practitioner reports. Another example is that some PCFs reported that they tended to focus more on counselling parents and supporting their personal well-being, while others emphasized bridging the home/school learning gap, which was most likely a function of their previous training and work experience (some were Early Years practitioners, while others had backgrounds in counselling or social care work).

The Quality Specialist cited the ethos of CDI as being the reason why some decisions were left to individual centres: CDI has an ethos of allowing centres to have ownership of their own programme journey once certain structures for programme implementation are in place. There was a general feeling from Early Years practitioners that this message was conflicted because while they were allowed a certain degree of ownership of implementation, they felt that there were many areas in which CDI had specific expectations for how they should run the programme (e.g. length of day, training, attendance at meetings, planning, etc) and it was difficult to determine when they should take ownership and when CDI should be consulted.

Implications of process findings on relationship with CDI

When it is considered that a successful programme should be replicable, the differences in implementation alluded to in the Early Years practitioner focus groups (and acknowledged by CDI staff consultation) could point to a dilution of programme effects. This, in turn, points to the need for a balancing act between services being community-led and evidence-informed. In the case of scientific evaluations, it is important to have an emphasis on the evidence base at all times. It is important that the significant role played by the delivery organisation (i.e. CDI) – in ensuring rigorous and replicable implementation of a programme – not be underestimated. Where contradictions exist between a delivery agency's ethos and the implementation of a programme, there should be one clear message emerging for those who are delivering the programme on the ground, so that any grey areas do not lead to differential delivery and therefore dilution of effects. That CDI left scope for PCFs, for example, to deal differently with parents as a function of the PCFs' previous experience and training is not necessarily a negative thing, particularly for parents (who most likely received at least some form of support that they required and appreciated). It is only when it comes to isolating the success of individual manual components in a quantitative way that such an approach becomes problematic. A purely qualitative design is better suited to unpicking the mechanisms that underlie the development and implementation of a novel role such as the PCF and this underlines the importance of choosing a research design that maps very clearly onto programme outcomes when research is at the commissioning stage. Where effects are not found, it does not mean that positives did not occur, but perhaps indicates that there was a mismatch between the research model and programme outcomes. Given that it transpired that the CDI *Early Years* Programme was bedding-in for at least the first phase of programme implementation, perhaps a formative rather than a summative evaluation would have been the more suitable method for examining programme outcomes.

5.3.6 Structures

Communities of Practice (COP)

The Communities of Practice (COP) meetings were a structural aspect of the CDI *Early Years* Programme implementation that were designed to allow for support, shared learning, feedback and consultation with the Quality Specialist and with other Early Years services implementing the programme. The meetings took place on a regular basis and contained different agendas into which Early Years practitioners could have an input.

Early Years practitioners' perspectives on the COPs

Early Years practitioners were positive about the Communities of Practice meetings, at which they reported meeting with others delivering the programme and sharing ideas, information and issues. This was identified as a crucial feature of the programme, which helped them in their day-to-day programme implementation and which impacted on their practice. As one Early Years practitioner stated, '*Without the sharing and reflection [that the COP meetings allowed], you [practitioner] would not have had the same learning*'.

Practitioners reported getting tips from practitioners from other services on supports for parents and children in the local area and getting ideas for their own practice from presentations made by practitioners at these meetings. Practitioners recommended that the mechanism which allowed such meetings to happen (non-contact hours) be considered for all childcare programmes. COP meetings for PCFs were particularly useful in addressing the issues with the definition and duties of the PCF role, although this only happened towards the end of the second year of Cohort 2 implementation: *'We sat down with [Quality Specialist] and amended it, made it clearer what needed to be done as part of the role in the future.'*

Quarterly progress meetings and manager meetings

Early Years practitioners did not identify quarterly progress meetings as being a support to themselves individually, although most managers reported that they felt the meetings kept them on track and were useful for discussion of ongoing issues, concerns or simply for information sharing. However, individual Early Years practitioners were not involved at the level of the progress or manager meetings, and therefore were one step removed from any discussions of practice, manual fidelity or other issues, despite being directly involved with these matters on the ground. Analysis of initial progress reports from the different intervention services indicated diversity in the type and level of information provided, although this seemed to have been streamlined over time with clear templates being provided to services in relation to what type of information should be included in the report. As practitioners expressed a desire (in focus groups) to make manual fidelity more uniform and clear-cut, it would have been useful for CDI to develop and include a programme component checklist for inclusion in the progress reports. This would have allowed both Early Years practitioners and managers to keep a regular check on programme implementation and also would have enabled the quick intervention of CDI if it became clear that some aspects of the programme were progressing better in some services than others. While practitioners were asked to report back on their practice quarterly, this was done in a written narrative report format compiled by their manager, which allowed for monitoring in a general sense but did not allow for clear and immediate assessment of progress and for comparison across services. The message from practitioner focus groups was that vagueness about roles, expectations and components of the programme could have been improved by clearer reporting structures, guidelines or checklists.

Implications of process findings on manager meetings and reporting

The opportunity that manager meetings and compilation of progress reports offered for CDI to regularly monitor manual fidelity may have been missed. Early Years practitioners and managers expressed a desire for more checklists and clearer guidelines on roles and expectations, and these could have been incorporated into progress reports and discussed at manager meetings to offer an added support to programme implementation and to help ensure uniformity of approach across services. While some Early Years practitioners and managers acknowledged and were appreciative of the fact that the Quality Specialist had made herself available to them through ad hoc manual fidelity meetings, this was not reported by practitioners from all services. These manual fidelity sessions were also done as a result of a request from a manager or practitioner, therefore meaning that only those services that were aware of a particular issue or problem with their implementation received input and support. The meetings were an appropriate and useful structure to support manual fidelity, but given that they were ad hoc in nature, this may have meant that some services that required support in relation to manual fidelity may not have received it due to a lack of awareness of their need for support or clarification.

Chapter 6: Key learning and recommendations for policy and practice



Early
Childhood
Care and
Education

6.1 Key learning

- The CDI *Early Years* Programme produced positive programme effects in terms of overall curricular and planning quality, and the quality of activities. It is suggested that the positive effects for curricular and planning improvements were as a direct result of Early Years practitioner training and the organisational structure of the programme, i.e. providing well-trained practitioners at a lower adult:child ratio (1:5) and allowing them non-contact planning and review hours (37-hour week). As has been found in other research (Siraj-Blatchford and Sylva, 2004), it is likely that the combination of these programme elements resulted in improved quality rather than one single component being responsible for the outcomes alone.
- If Early Years practitioners are trained during, rather than prior to, the first year of programme implementation, it may take a year for them to become fully confident and familiar with programme content. This can result in little or no programme effects in the first year. Therefore, it is advisable to have structures in place whereby training is delivered prior to programme implementation, to increase the length of the programme to allow for training to become bedded-in before evaluation and programme review begins, or to consider a formative research model at the commissioning stage. This finding has relevance for training and research design across a variety of sectors.
- Process findings indicated that Early Years practitioners identified the HighScope 'Six Steps to Conflict Resolution' as a key change in their practice and, in turn, to the behaviour of the *Early Years* intervention children and the atmosphere of the *Early Years* environment.
- By end phase, the behaviour of intervention children was classified more often as normal, and less often as borderline or abnormal, on the measures of social skills and behaviour subscales, as rated by Early Years practitioners and parents. This trend provided some support (albeit statistically non-significant) for the efficacy of the programme in improving social and behavioural outcomes.
- The significant improvement in Literacy environment quality scores in the intervention group can be explained by aspects of programme implementation, including speech and language therapy training for Early Years practitioners and the use of HighScope key developmental experiences in language and literacy. Feedback provided by practitioners in focus groups indicated that they found the training provided by the speech and language therapist and the use of key developmental indicators useful to their practice, particularly in the second year once they became more familiar with the programme.
- Delivery of sessional parent training as part of an *Early Years* programme has a positive effect on the home-learning environment, such that the more often a parent attended parent training sessions, the higher the home-learning environment became. This effect persisted up to a year after the parent training sessions finished.
- Lack of explicit programme effects for children on cognitive and language measures should not be viewed as an outright failure of the programme. As process and quantitative quality findings indicated that it took a year for programme implementation to bed-in (i.e. training being implemented smoothly into practice and practitioner confidence with programme roles), it is suggested that it may take even longer for changes to filter down from the practitioner to the child level and 'sleepers' effects, such as the mediation of improved social skills or better home-learning environment, may result in longer term benefits for the children.
- Targeted speech and language training for Early Years practitioners (including regular access to an on-site speech and language therapist in combination with a high-quality Early Years curriculum such as HighScope) improves the quality of the literacy environment in Early Years services. It also means that intervention happens at a younger age, therefore the children are less likely to suffer long-term negative effects on their learning and development.

6.2 Recommendations for policy and practice

- Parent training can lead to improvements in the home-learning environment. If the key features of the Parents Plus Community Course (an evidence-based, manualised programme, strongly supported by a well-trained and accessible mentor) are replicated in future parent training programmes, then similar positive outcomes are likely.
- Future incarnations of targeted Early Years intervention programmes should focus on developing extremely detailed and clear guidelines in relation to day-to-day implementation and should include, at a minimum:
 - o a clear message from the delivery agency on its role and the level of ownership that individual services can have over the programme;
 - o a detailed manual, with clear definition of programme components;
 - o clear delineation of individual roles, duties and expectations;
 - o weekly checklists for practitioners according to each role;
 - o timetables corresponding to the delivery of programme components;
 - o uniform and clear reporting structures that link back to manual components;
 - o availability of a mentor to provide expertise and support on each component.
- Weaknesses in any of the above areas can lead to a dilution of programme effects, particularly if multiple sites and practitioners are involved.
- Taken with the process results on practitioner integration of conflict resolution approaches, findings indicating a trend towards better social skills in the intervention group provide support for the mainstreaming of a child-centred problem-solving approach in the Early Years sector. However, it is important that there are sufficient practitioner numbers to support children to resolve conflicts; therefore, it may be best to consider this approach in conjunction with an adult:child ratio of 1:5, as was the case in the CDI *Early Years* Programme.
- In light of findings in relation to literacy quality and speech and language therapy utilisation, it is recommended that an awareness module on speech and language needs be included in all Early Years practitioner training and that models of multi-agency delivery be developed to roll out more on-site speech and language therapists.
- It is recommended that Early Years practitioners be given the time to plan diverse activities and compile records on individual children through the extension of the standard Early Years service working week. Increased planning time, both daily and weekly, in combination with the knowledge gained from training on HighScope key developmental indicators for activity planning, is key for improving the quality of activities in Early Years environments and resulted in a programme effect on the quality of the curricular and planning environment in the current research.
- The provision of activities in Early Years services and the compilation of detailed plans and child records also benefit from the availability of an extra child key worker, whose presence facilitates closer engagement with more children in smaller groupings and allows for more individualised planning, both of which have been found to be linked to better child outcomes in international studies.
- Adoption of early childhood frameworks and models such as the Síolta Framework are aided by better practitioner ratios and longer working days. Engagement with frameworks such as Síolta are, however, administratively time-consuming. Other key features that support engagement include interested, well-trained and invested practitioners; organised managers who take ownership of the process; and low practitioner turnover. Mainstreaming of frameworks such as Síolta needs to take these factors into account to ensure successful engagement and learning for Early Years practitioners in the short and long term.

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Appendix 1: Research instruments and fieldworker training

Child level

British Ability Scales II (Elliot *et al*, 1996)

The British Ability Scales (BAS, 2nd edition) were designed as a test battery that would provide a meaningful profile of specific cognitive abilities based on free-standing subtest scores rather than a summative IQ score. Thus the scores yielded from the core scales are individually interpretable and robust in their own right. The length of assessment was also considered in the design, with age-related starting points, decision points and alternative stopping points included, which reduce the number of items administered and mean that assessment time is kept to a minimum. Decision points allow the assessor to stop the assessment once it becomes clear that the child has reached items that are too difficult for them to deal with and therefore protects the child's self-esteem and motivation (Hill, 2005). This feature reduces the negative impact of repeated failure on the child and is a powerful argument for the use of the instrument in disadvantaged populations. The scales have been used internationally in countries such as England (Sylva *et al*, 2004), Scotland (Bromley, 2009) and Australia (Boland, 1988), facilitating the drawing of cross-study inferences.

Specifically, the subscales that are used in the current research are designed to measure certain child abilities and processes, which allow us to gain more information about children's cognitive, language and number strengths and weaknesses. The *Block Building* subscale measures perceptual motor ability (spatial problem-solving, visual-perceptual matching, eye-hand coordination, perception of relative orientation). The *Verbal Comprehension* subscale measures receptive verbal knowledge (understanding of spoken language, syntax, prepositional and relational concepts and vocabulary), while the *Naming Vocabulary* subscale measures expressive verbal knowledge (expressive language skills, vocabulary knowledge of nouns, general knowledge and general language development). The *Picture Similarities* subscale measures non-verbal reasoning (inductive reasoning, visual perception and analysis, general knowledge). Finally, the *Early Number Concepts* subscale measures quantitative knowledge and reasoning (knowledge of numerical and pre-numerical concepts, visual perception and analysis of pictures). Norms established for the BAS are based on a population of British children, which, in the absence of Irish-based norms, is preferable to using an instrument with norms based on an American population given the similarities between Britain and Ireland in language and cultural terms.

Adaptive Social Behaviour Inventory (Hogan, Scott & Bauer, 1992)

The Adaptive Social Behaviour Inventory (ASBI) is a standardised inventory for infant pre-school social development. The ASBI was developed with the intention of identifying children's social skills in terms of social competence as distinct from social pathology. The ASBI is worded for ease of use with populations with literacy problems and has been validated for use in pre-school settings (Greenfield *et al*, 2004). Each of the 30 items on the inventory represents a directly observable behaviour, which contribute to three factors – Express, Disrupt and Comply – the internal validity of which was identified by Hogan *et al* (1992) and later supported by subsequent independent research (Greenfield *et al*, 2004).

Phonological Awareness (Bryant and Bradley, 1985)

Phonological awareness is the understanding of different ways that oral language can be divided into smaller components and manipulated. Bradley and Bryant (1983 and 1985) found that there is a strong relationship between children's sensitivity to rhyme and alliteration when they begin school and their progress in learning to read over the following 3 years, even controlling for intelligence. Thus, while phoneme awareness develops through learning to read, some awareness of onset and rhyme appears to be already present before reading begins (Kirtley *et al*, 1989). This suggests that the traditional infant classroom emphasis on rhymes (nursery or otherwise) is even more important in the development of pre-reading skills and supports the strategy of heightening beginning readers' awareness of sounds in words by pointing these out to them (Wray, 1994). The measure proposed is part of the battery of assessments used in the EPPE study (Sammons *et al*, 2002 and 2006). This test is more suited to a post-test situation since it is most commonly administered before children are at least 3 years and 5 months of age.

Letter Identification (Clay, 2002)

Marie Clay's *Observation Survey of Early Literacy Achievement* incorporates 6 literacy tasks, all of which are necessary for describing a young child's emerging reading and writing behaviours. The Letter Identification task is used to determine which letters the child knows and the preferred mode of identification.

Service level

Early Childhood Environment Rating Scale – Revised (Harms *et al*, 1998)

The Early Childhood Environment Rating Scale, Revised edition (ECERS-R) provides an overall picture of the surroundings that have been created for the children and adults who share an early childhood setting. The ECERS-R consists of 43 items that assess the quality of the early childhood environment, including use of space, materials and experiences to enhance children's development, daily schedule and supervision. This 43-item scale covers 7 categories: personal care routines; space and furnishings; language-reasoning; activities; interactions; program structure; parents and staff. Each item is ranked from 1 to 7: a ranking of 1 describes inadequate conditions, while a ranking of 7 describes excellent conditions. The ECERS-R is reliable at the indicator and item level, and at the level of total score. The internal consistency at the subscale level ranges from 0.71 to 0.88, with a total scale internal consistency of 0.92.

Early Childhood Environment Rating Scale – Extension (Sylva *et al*, 2006)

The Early Childhood Environment Rating Scale, Extension (ECERS-E) was developed by the EPPE research team to supplement the ECERS-R (*see above*). It was an extension of the original in that it was more explicitly 'cognitive' in its assessment of play-based learning environments. Moreover, it was designed to measure the processes that lead to children's cognitive and social development in the context of an early childhood curriculum and allowed for the assessment of early childhood practice that was aimed at cultural and intellectual diversity (Sylva *et al*, 2006). The 18-item scale is split into 4 subscales: literacy, mathematics, science/environment and diversity. The items are scored with reference to curriculum, pedagogy, resources and the setting's organisation. Each item is ranked from 1 to 7: a ranking of 1 describes inadequate quality, while a ranking of 7 describes excellent quality. Items are scored 3 if the pedagogy seems accidental or lacks coherence, while a score of 5 applies if the setting shows evidence of adult instruction balanced with child play and/or exploration. A score of 7 is applied in cases where the pedagogy leads to adults and children contributing to the construction of shared meanings, knowledge and skills (Sylva *et al*, 2006). The ECERS-E has been used extensively in research such as England's EPPE project (1999-2003).

Arnett Caregiver Interaction Scale (Arnett, 1989)

The Arnett Caregiver Interaction Scale (CIS) consists of 26 items forming 4 sub-scales, each of which measures a different aspect of caregiver-child interaction: positive relationships (indicating warmth and enthusiasm in interaction with children); punitiveness (indicating harsh or over-controlling behaviour in interaction with children); permissiveness (indicating avoidance of discipline and control of children); and detachment (indicating lack of involvement in interaction with children). The CIS has been associated with child outcomes in the EPPE study. Therefore, it is hoped that the scale will contribute towards an understanding of the child outcomes obtained in the current evaluation, as well as acting as a measure of setting practice.

Parent level

The parent interview developed for the purposes of the evaluation draws from existing psychometric assessment tools, as well as containing general questions designed to provide a clear picture of the child and family background. Family background questions cover topics such as the structure of the family, their ethnic origin, the languages spoken by the family and parental education and employment. There are child-specific questions about birth weight, position of child in the family, childcare history and presence of diagnosed or undiagnosed developmental, physical or psychological conditions. The psychometric instruments included in the parent interview are outlined below.

Strengths and Difficulties Questionnaire (Goodman, 1997)

The Strengths and Difficulties Questionnaire (SDQ) is a behavioural tool that is used to screen the behaviour of children and teenagers. It contains statements about 25 psychological attributes, some positive and others negative. These 25 attributes are divided between 5 scales: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behaviour. Respondents indicate their level of agreement with the 25 items by choosing a response on a 3-point Likert scale, which ranges from 1 to 3 (not true, sometimes true and certainly true). In addition, the SDQ can contain an impact supplement, which asks whether the respondent thinks the young person has a problem and if so, enquire further about chronicity, distress, social impairment and burden to others. This provides useful additional information for clinicians and researchers with an interest in psychological or psychiatric problems, and is a useful tool in the review of services. In the current evaluation, parents are asked to rate their pre-school children on the pre-school version of the SDQ, which also contains an impact supplement. Advantages of the SDQ are its use in similar studies, nationally (Kelleher and McGilloway, 2006; Sharry *et al*, 2005) and internationally (Kiernan and Mensah, 2008; Jones *et al*, 2007; Stewart-Brown *et al*, 2004, Martin and Sanders, 2003).

Parent Stress Scale (Berry and Jones, 1995)

The measure is a self-report scale that contains 18 items representing positive themes of parenthood (emotional benefits, self-enrichment, personal development) and negative components (demands on resources, opportunity costs and restrictions). Parents are asked to agree or disagree with items in terms of their typical relationship with their child and to rate each item on a 5-point scale (strongly disagree, disagree, undecided, agree and strongly agree). The 8 positive items are reverse scored so that possible scores on the scale can range between 18-90. Higher scores on the scale indicate greater stress. The Parent Stress Scale demonstrated satisfactory levels of internal reliability (0.83) and test-retest reliability (0.81). The scale demonstrated satisfactory convergent validity with various measures of stress, emotion and role satisfaction, including perceived stress, work/family stress, loneliness, anxiety, guilt, marital satisfaction, marital commitment, job satisfaction and social support. Discriminant analyses demonstrated the ability of the scale to discriminate between parents of typically developing children and parents of children with both developmental and behavioural problems (Berry and Jones, 1995). The scale has been used in similar studies nationally (Griffin *et al*, 2010; Sharry *et al*, 2005).

Home Learning Environment Index – Adapted (Melhuish *et al*, 2001)

The Home Learning Environment Index includes questions concerning the frequency that children engaged in 14 activities: playing with friends at home; playing with friends elsewhere; visiting relatives or friends; shopping with parent; watching TV; eating meals with the family; going to the library; playing with letters/numbers; painting or drawing; being read to; learning activities with letters; learning activities with numbers/shapes; learning activities with songs/poems/nursery rhymes; and having a regular bedtime. Frequency of activities are coded on a 7-point scale for most items (0 = not at all; 7 = very frequent). The 7 activities that provide clear learning opportunities (frequency read to, going to the library, playing with numbers or letters, painting, being taught letters, being taught numbers, being taught songs/poems/rhymes) had significant positive effects on child outcomes in the EPPE study and the 7 scores were added to produce an index. Based on the experience of the Principal Investigator with the EPPE project and as a result of a piloting of the scale, the index was slightly adapted for the purposes of the current research. In the case of two of the items, the rating scale was reduced to a 5-point scale and a 4-point scale, which was more meaningful in the context of the item content. For the item on frequency of going to the library, the response could range from 1 to 4, with 4 indicating a weekly visit to the library, given that a daily visit to the library would be quite unlikely. Similarly, the range for the item on reading at home with the child was changed to a 5-point scale, which allowed for the possibility that parents read with their child more than once a day, but also, at the other end of the scale, less often than once a week. In addition, the frequency of playing with letters and numbers was separated out into two separate items since they represent quite different activities, which target different skill areas.

Early Years Practitioner Focus Group

A focus group script was developed by the evaluation team and covered topics under the headings CDI, Training, Manual, Programme structure, Additional supports, Parents and Miscellaneous. Open-ended questions were asked by the focus group facilitator (lead researcher) and where necessary, a range of pre-determined prompts were used. Miscellaneous questions offered an opportunity for the staff to provide extra information that had not been elicited by previous questions. The focus group script was piloted prior to data collection with other researchers and with one group of pre-school staff who were not involved in the research and changes were made based on the piloting process.

Fieldworker training

In preparation for data collection, fieldworkers went through a rigorous training process. Through contacts established by one of the Principal Investigators, it was possible to hire trainers who were experts in the training and delivery of the Early Childhood Environment Rating Scales and also in the training and administration of the British Ability Scales. In addition to the training provided by these expert trainers, additional training was provided by the lead researcher and covered topics such as engaging with young children, child protection, data collection protocols and working with parents and families.

Training for the Early Childhood Environment Rating Scales

A full training day on the administration of the ECERS-R and ECERS-E scales was lead by Professor Siraj-Blatchford and an independent expert trainer from the UK. This involved familiarisation with the scoring and content of the scales, as well as a video-observation session at the end of the day where trainees watched videos showing samples of practice and were required to score the sample segments as they would if administering the scales in reality. Then practice sessions were organised during which the fieldworkers went to childcare settings in pairs and administered the scales as they would have to do during data collection. Each fieldworker completed 3 practice sessions before reliability observations took place. For the reliability observations, an expert rater from a private research consultancy in the UK came to Dublin and the 3 fieldworkers and the expert rater observed practice in 2 different childcare settings, using a different rating scale each time. They also administered the CIS scale on which training had been provided by the expert trainer.

Then the scores of the fieldworkers were compared to the scores of the expert rater and the percentage total agreement between the expert rater and each individual trainee was calculated for each scale. For the ECERS-R, the expert rater was in exact agreement with Fieldworker 1 on 70% of items, with Fieldworker 2 on 73% of items and with Fieldworker 3 on 85% of items. For the ECERS-E, the expert rater was in exact agreement with Fieldworker 1 on 93% of items, with Fieldworker 2 on 73% of items and with Fieldworker 3 on 80% of items. It was decided, therefore, that Fieldworker 3 would have responsibility for the administration of the ECERS-R for the course of the evaluation and Fieldworker 1 would have responsibility for administration of the ECERS-E. The agreement between the expert rater and the fieldworkers on the CIS was 96% and 92% respectively. As the ECERS-E has fewer items than the ECERS-R, it was decided that Fieldworker 1 would also have responsibility for the administration of the CIS during data collection. Both fieldworkers were required to take part in observations with the lead researcher (already trained and reliable) in non-evaluation settings in periods when data collection was not taking place to ensure that they remained reliable and the inter-rater reliability for these observations remained high (85%-94% agreement for the ECERS-R, 86%-93% agreement for the ECERS-E and 96%-100% agreement for the CIS).

Training for the British Ability Scales

An expert in the administration of the relevant subscales of the British Ability Scales (BAS) came from the UK to train 4 fieldworkers in the use of the scales for the purposes of the evaluation. Initial training took place over one day, which involved fieldworkers learning in detail about how to administer the subscales. The trainer provided advice on common administration errors and on working with and engaging young children. Role play sessions took place during which fieldworkers paired up and were required to administer the subscales in front of the trainer, who provided feedback for each fieldworker to consider and work on during forthcoming practice sessions. After initial training, each fieldworker was given their own BAS kit and one-to-one practice sessions with pre-school children were organised over a 2-week period, with each fieldworker administering the scale to at least 6 children. These practice sessions were completed in pairs, with one fieldworker acting as an observer while the other administered the scales and both discussed the sessions afterwards, identifying the positive and negative aspects of the administration. Once the 2-week practice period had passed, the trainer returned to rate the reliability of each trainee. The expert rater judged a fieldworker to be reliable only if there was 100% agreement between her and each individual fieldworker at the item level. Moreover, fieldworkers had to administer the scales in such a way that involved no administration errors, such as a deviation from the script, stopping or starting too early or late, or the provision of an unintentional verbal or visual cue. The expert rater judged the 4 fieldworkers to be reliable after 2 days of observations, with each fieldworker being observed administering the scale to at least 3 children. The lead researcher and another fieldworker were judged by the expert rater to be the 'gold standard' for the team for the purposes of future training. Indeed, it was necessary for the lead researcher to train new fieldworkers at subsequent stages in the research (mid-phase, 2009) and the same training method was used as described above.

Training for the parent interview

Prior to administering the parent interview, fieldworkers attended a training day, lead by the lead researcher. Fieldworkers were provided with procedures to follow in relation to meeting parents, engaging with them and debriefing them about the research. They were also advised to take the nature of the parents' everyday lives into consideration when organising and conducting interviews with them. CDI's needs analysis report *How are Our Kids* (2004) had characterised the sample as being open to multiple disadvantage, which could range from literacy problems to poverty, to one-parent families and to drug-use. Moreover, fieldworkers were reminded that the simple job of parenting young children could create demands on the parents that could impact on the interview process. They were urged to be mindful of any additional stressors that sample parents may have had in their lives and to take this into account when interviewing them. It was recommended that the interviewer take a sensitive approach to the parent, administering the interview verbally (in case of literacy problems). It was also noted during training that some parents may have English as a second language and fieldworkers were advised to arrange for a translator, such as an older child or friend or spouse if the parent was amenable to this. Since some of the questions contained personal information in relation to the parent's employment, education and family background, fieldworkers were reminded to be lead by the parent in terms of what information they were willing to share and not to probe excessively if a parent seemed reticent about sharing personal information.

Data collection – Activity and Schedule		Data gathered	10-11 2008	01-02 2009	05-06 2009	10-11 2009	01-02 2010	05-06 2010	10-11 2010	05-06 2011	10-11 2011
Baseline Child Assessment Cohort 1	Baseline Child Assessment Cohort 1	Child level: Motor, cognitive, language, social, emotional, learning development/skills									
	Mid-phase Child Assessment Cohort 1										
	Baseline Child Assessment Cohort 2										
	Mid-phase Child Assessment Cohort 2										
	End phase Child Assessment Cohort 1										
	End phase Child Assessment Cohort 2										
Baseline Setting Assessment Cohort 1	Baseline Setting Assessment Cohort 1	Setting level: Quality of setting, developmental supports, staff/child relationships									
	Mid-phase Setting Assessment Cohort 1										
	Baseline Setting Assessment Cohort 2										
	Mid-phase Setting Assessment Cohort 2										
	End phase Setting Assessment Cohort 1										
	End phase Setting Assessment Cohort 2										
Baseline Parent Interviews Cohort 1	Baseline Parent Interviews Cohort 1	Parent level: Parenting perceptions, parent-child relationships, family background, home-learning environment, parent stress									
	Baseline Parent Interviews Cohort 2										
	End phase Parent Interviews Cohort 1										
	End phase Parent Interviews Cohort 2										
	Practitioner Interviews/Focus groups										
	Practitioner Interviews/Focus groups										
Teacher Interviews		Transition experiences									

Key:

	Data collection completed as at November 2010
	Child Assessments: BAS II subscales, ASBI, Letter Recognition (end phase only), Phonological Awareness (end phase only)
	Setting Observation Assessments: ECRES-R (baseline and end phase only), ECRES-E, Arnett CIS
	Parent interviews: Designed by CDI Evaluation Team, adapted from SDQ, EPPE HLE Index, Parent Stress Scale
	Practitioner interviews/Focus groups: Designed by CDI Evaluation Team
	Teacher interviews: Designed by CDI Evaluation Team, adapted from Building Bridges Study

Appendix 2: Process evaluation methodology

Description of data to be analysed

1. Focus group and interview data.
2. Case study data, including naturalistic observation data, documentation and practitioner interview data.
3. Documentation on programme implementation – minutes of meetings, process diary maintained by research team, progress reports.

Plans for analysing data

Focus group and interview data

This methodology for analysis of focus group/interview information is based on Glaser and Strauss's (1967) original conception of grounded theory methodology, which is framed in terms of a series of iterations or a process of 'constant comparison' in which the researcher moves back and forth among the data and gradually advances from coding to conceptual categories, and further towards theory development. Firstly, the actual language of the speaker(s) was coded using the nVivo data management programme; then while coding an incident, the researcher compared it with all previous incidents coded. This is a process that 'soon starts to generate theoretical properties of the category' (*ibid*, p. 106). The next step was to group the discrete codes according to conceptual categories that reflected commonalities among codes. At this point, these properties were being identified through the interpretive lens of the researcher, who was already beginning to abstract meaning from the data. At the following 'thematic' level, the researcher treated the various code clusters in a selective fashion, deciding how they related to each other and what stories they told, referring to the underlying message or stories of these categories as 'themes'. It was in seeking the interrelationships between these themes that the research team began to build a theory and in the case of the research, these theories were expressed as qualitative findings under the various themes of implementation, fidelity and utilisation. In the current research, this occurred by examining negative cases, filling in categories and accounting for variation, leading to an ultimate picture in relation to practitioner experience of training or the parental component, for example.

Process documentation

Key documents were examined to provide clarification and support to existing data on the process of programme implementation as a means of providing a formal record for the life of the programme. As the research team used an embedded experimental design, in which qualitative data is embedded within the standard experimental RCT design as a means of collecting concurrent qualitative information, there was not an in-depth examination of all documentation as there might have been in an evaluation with a solely qualitative focus. The purpose of reviewing the documentation was to help fill in gaps that may have emerged in relation to the other data collected on programme fidelity, organisation and utilisation. For example, progress reports may have contained details about differences in programme implementation in services or minutes of meetings provided a time-linked record of how and why aspects of the programme progressed. This helped to add support to findings from focus groups or interviews, and helped to explain quantitative findings.

Treatment of missing data

Multiple imputation was used for cases of missing data on outcome variables in the parent and child database. Data were missing between 10% and 33% on given outcome variables. The fully conditional specification method of multiple imputation in SPSS 17 was used for imputation. This is an iterative Markov chain Monte Carlo (MCMC) method that can be used when the pattern of missing data is arbitrary (monotone or non-monotone). For each iteration and for each variable in the order specified in the variable list, the fully conditional specification (FCS) method fitted a univariate (single dependent variable) model using all other available variables in the model as predictors, then imputed missing values for the variable being fit. It was possible to impute data for almost all outcome variables, but in the case of some variables with skewed (i.e. non-normal) outcome data this was not possible even with transformations (i.e. SDQ Hyperactivity, some items on the HLE Index) and the chain failed to converge for these variables. Where outcome data have not been imputed, this is indicated in the results tables. The purpose of multiple imputation is to generate possible values for missing values, thus creating several 'complete' sets of data. Analytic procedures that work with multiple imputation datasets produce output for each 'complete' dataset, plus pooled output that estimates what the results would have been if the original dataset had no missing values. These pooled results are generally more accurate than those provided by single imputation methods. As some children started pre-school in the second year of programme implementation, they necessarily had missing data at one phase of the data collection

period because they had not been attending pre-school at the time of baseline assessments the previous year. These children were not included in the final imputed database as the data in this dataset were not missing at random and therefore the missingness of the data could not be ignored, meaning multiple imputation was not a suitable method for dealing with missingness (Allison, 2002). Further analyses were run with these late starter scores and the similarities or differences in findings discussed as relevant.

Appendix 3: Additional descriptive statistics

Child and family level statistics

Table A3.1: Child numbers for Cohorts 1 and 2, by condition

	Planned	Expected*	Invited	Consented	Achieved**
Intervention Cohort 1	110	90	79	78	77
Control Cohort 1	110	92	82	76	75
Intervention Cohort 2	110	117	88	88	84
Control Cohort 2	110	110	100	78	76
Total	440	409	349	320	312

* 'Expected' indicates the numbers provided by CDI to the evaluation team in the months immediately preceding data collection with a new cohort of settings.

** This reflects the number of children who actually completed one-to-one child assessments at baseline.

Table A3.2: Parent ethnic background and country of origin, by condition

Ethnic background and country of origin	Whole Sample		Intervention		Control	
	N	%	n	%	n	%
Ireland (White Irish)	243	78.6	130	77.8	113	79.6
Nigeria (Black African)	34	11.0	24	14.4	10	7.4
Somalia (Black African)	6	1.9	2	1.2	4	2.8
The Republic of Congo (Black African)	4	1.3	2	1.2	2	1.4
Ireland (Irish Traveller)	5	1.6	5	3.0	–	–
Indian (Asian)	3	1.0	–	–	3	2.1
Chinese (Asian)	3	1.0	–	–	3	2.1
Angola (Black African)	1	0.3	–	–	1	0.7
Ghana (Black African)	1	0.3	1	0.6	–	–
Russia (White European)	2	0.6	1	0.6	1	0.7
Estonia (White European)	1	0.3	–	–	1	0.7
Italian (White European)	1	0.3	–	–	1	0.7
French (White European)	1	0.3	–	–	1	0.7
Japanese (Asian)	1	0.3	–	–	1	0.7
Algerian (Black African)	1	0.3	–	–	1	0.7
UK (White British)	1	0.3	1	0.6	–	–
Phillipino (Asian)	1	0.3	1	0.6	–	–
Total	309	100	167	100	142	100

Table A3.3: Main language spoken by families, by condition

Language	Whole Sample		Intervention		Control	
	N	%	n	%	n	%
English	276	89.0	150	89.3	126	88.7
Yoruba	10	3.2	8	4.8	2	1.4
Igbo	3	1.0	2	1.2	1	0.7
Malayalam	2	0.6	–	–	2	1.4
French	6	1.9	3	1.8	3	2.1
Swahili	5	1.6	2	1.2	3	2.1
Russian	3	1.0	1	0.6	2	1.4
Filipino	1	0.3	1	0.6	–	–
Hebrew	1	0.3	1	0.6	–	–
Bangla	1	0.3	–	–	1	0.7
Chinese	2	0.6	–	–	2	1.4
Total	311	100	168	100	142	100

Table A3.4: Type of family structure, by condition

Adults living with child	Whole Sample		Intervention		Control	
	N	%	n	%	n	%
Child lives with both parents	196	63.8	107	64.1	89	63.6
Child lives with lone parent	101	32.9	58	34.7	43	30.7
Child lives with one parent and step-parent	8	2.6	1	0.6	7	5.0
Child lives with grandparents	1	0.3	–	–	1	0.7
Total	306	100	166	100	140	100

Parental education

Table A3.5: Maternal education level, by condition

Education level	Whole Sample		Intervention		Control	
	N	%	n	%	n	%
Primary education	31	10.7	23	14.3	8	6.2
Low secondary	63	21.7	34	21.1	29	22.5
Leaving Certificate	92	31.7	49	30.4	43	33.3
Subdegree	91	31.4	47	29.2	44	34.1
Degree or above	13	4.4	8	5.0	5	3.9
Total	290	100	161	100	129	100

Table A3.6: Paternal education level, by condition

Education level	Whole Sample		Intervention		Control	
	N	%	n	%	n	%
Primary education	42	18.8	29	22.0	13	14.1
Low secondary	62	27.7	36	27.3	26	28.3
Leaving Certificate	78	34.8	41	31.1	37	40.2
Subdegree	26	11.6	18	13.6	8	8.7
Degree or above	16	7.2	8	6.1	8	8.7
Total	224	100	132	100	92	100

Socio-economic status

Table A3.7: Maternal socio-economic status, by condition

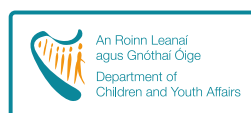
Socio-economic status	Whole Sample		Intervention		Control	
	N	%	n	%	n	%
Employers and managers	3	0.9	2	1.1	1	0.7
Higher Professional	3	0.9	1	0.6	2	1.4
Lower Professional	19	5.8	11	6.3	8	5.4
Non-manual	162	50.2	84	47.7	78	53.1
Manual skilled	6	1.8	5	2.8	1	0.7
Semi-skilled	17	5.2	12	6.8	5	3.4
Unskilled	35	10.8	21	11.9	14	9.5
Missing/answer not give	78	24.2	40	22.7	38	25.9
Total	323	100	176	100	147	100

Table A3.8: Paternal socio-economic status, by condition

Socio-economic status	Whole Sample		Intervention		Control	
	N	%	n	%	n	%
Employers and managers	11	3.4	7	4.0	4	2.7
Higher Professional	9	2.7	8	4.5	1	0.7
Lower Professional	16	4.9	13	7.4	3	2.0
Non-manual	47	14.5	27	15.3	20	13.6
Manual skilled	72	22.3	28	15.9	44	22.9
Semi-skilled	18	5.6	13	7.4	5	3.4
Unskilled	55	17.0	35	19.9	20	13.6
Missing/answer not give	94	29.1	45	25.5	49	33.3
Total	322	100	149	100	131	100

The Childhood Development Initiative
St. Mark's Youth and Family Centre
Cookstown Lane
Fettercairn
Tallaght, Dublin 24

Tel: (01) 494 0030
Fax: (01) 462 7329
E-mail: info@twcdi.ie
Web: www.twcdi.ie



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Philanthropies